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OBSTETRIC NURSING

MARIAN HUMFREY

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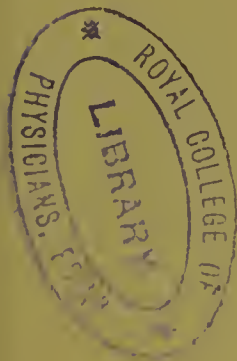
MANUAL OF OBSTETRIC NURSING

BY

MARIAN HUMFREY

BRITISH LYING-IN HOSPITAL, LONDON; DIPLOMA LONDON OBSTETRICAL SOCIETY

MEMBER OF THE ROYAL BRITISH NURSES' ASSOCIATION AND OF ITS
REGISTRATION BOARD.



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— TO —

Her Royal Highness Princess Mary,
DUCHESS OF TECK.

Madam,

This work is written with a two-fold object: to raise the position of this portion of the Nursing Art, and to awaken in the minds of my countrywomen of all ranks in life a sense of its extreme importance to mothers themselves.

The gracious favour your Royal Highness has extended to my efforts to carry out both these important ends, by accepting the Dedication of my work, is most gratefully appreciated by,

Your Royal Highness's

Obliged and humble Servant,

THE AUTHORESS.

PREFACE.

THE subject of this work is Child-bed Nursing, for too long the most neglected and despised, the least understood, the most imperfectly taught, of any portion of nursing work.

It must have often occurred to women teachers of obstetric nursing, that, although we have many valuable handbooks on the subject, they do not altogether meet our requirements. To be of any real practical use to teachers, pupils, and nurses alike, a manual should explain everything and assume nothing. Now, this is just where our text-books are apt to fail us—they assume too much and explain too little. Hitherto they have been written by men, and, as a woman, I confess some of their sparse explanations require a good deal of “explaining”—notably in the infantile portion of our duty.

It may be said that nurses learn the technical part of their work in lying-in hospitals—which is perfectly true; it is also true that, from the necessarily brief period of their special instruction, they are apt to forget a good deal of it, and, though the forgotten detail may be unimportant in itself, the sum of these “forgettings” is serious, and deteriorates their value as obstetric nurses. Hence they may find a handy book of reference of use to them in their work.

There is one aspect of our portion of nursing we must not overlook, for it appertains to no other—Birth, involving the care of a new and tender little life, hence its supreme interest to our patients themselves; and I am not without hope that there may be found in these unpretending pages information that may prove, on many matters, of use and comfort to them, often, when most required, not readily obtainable.

THE AUTHORESS.



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A MANUAL OF OBSTETRIC NURSING.



PART I.—MATERNAL.

CHAPTER I.

DUTIES BEFORE LABOUR.

MODE OF PREPARING THE BEDROOM—THE BED—NURSE'S
ROOM, REQUISITES FOR—SIGNS OF IMPENDING LABOUR—
WHAT TO DO FOR THE PATIENT.

THE actual duties of Obstetric Nursing do not begin until the advent of labour, but it is a wise and customary plan to have the nurse in the house a week or so beforehand, and you may consider you are in attendance from the day of your arrival, and it will be your duty to quietly get things into readiness for the work that lies before you. With respect to the *layette* that will be handed over to your charge there is not much to be said, as it will most likely be complete in every way; still you must carefully go over it, to see if anything be wanting or amiss. There should always be two flannel bed jackets or nightingales (I prefer the former for our patients), and a cashmere or flannel dressing-gown or rather wrapper. A large woollen shawl should be put away with the other things, so that you can get it at once if required during or after labour. The binders that are provided for your patient must also claim your

attention, as they play an important part in Obstetric Nursing.

Now what are the qualities required in an Obstetric Binder? It should be supple, soft, smooth, of a material sufficiently open to admit of free transpiration from the skin, sufficiently strong to stand the strain of adjustment, and hold in the pins. Now we find all these qualities in a very humble material, viz., *unbleached* twill calico, at a few pence the yard. It should be cut into lengths of a yard and a quarter to a yard and a half long (never more than that for each binder), and left perfectly open. The reason for this is plain to see. The binders can be so easily and thoroughly washed and dried—an important point in an article which is worn constantly next to the skin. The calico should always be washed and mangled in the *first instance*, when the lengths are cut off, to remove all *dress* and to make them smooth.

The skilful adjustment of the binder will be discussed in its due place. After the binders, you must turn your attention to the pins that may have been provided for you. The best pins are the *best*. For obstetric binding, those of Kirby Beard's, at a shilling the sheet, are completely to be depended upon; they are nearly two inches long, beautifully smooth and straight, and perfect as to points and heads. Safety pins are much in vogue for binding, but I entirely deprecate their use for that purpose. I shall point this out more fully further on. You must always have a box of safety pins for use, of mixed sizes, and the very *best* make (never buy *bad* ones), as they are required for numberless purposes, as we shall see.

Having passed these matters under review, the nurse must turn her attention to the lady's bedroom. The first point for consideration is the position of the bedstead, which will doubtless stand free from walls as regards the sides, and it should be at least seven to eight inches away from the wall at the head, which, if practicable, should be *back* to the window, for a light on the eyes means insomnia to some patients; and when we consider the immense importance of sleep, ought we not to do anything we can to secure it? There is more in this simple arrangement than seems, as will be shown when your duties begin; besides which, when your patient is well enough to read a little in bed, she can

do so much more comfortably with back to the window than face to the light. Of course the plan of the room may make this impossible, or the lady herself may object to it, and in that case there is nothing to be done in the matter. But *when* it is practicable *suggest* it, and you will find it is nearly always readily acceded to, if you explain your reasons for it. If such be the case, have the bedstead moved, say a day or two after you come in, and when the servants are attending to the room, so there is plenty of help, and not leave it till the last minute, as large bedsteads are not moved about as the small bedsteads of Hospitals are.

Not only is the position of the bedstead as to the window to be considered, but as to the door as well, and, if possible, it should not be exposed to the draught from them. Of course, this depends upon circumstances, but, as I told you at the beginning, you must *never* fail to adapt circumstances to the advantage of your patient, and the furtherance of your most responsible duties, whenever you have the opportunity. Speaking from no small experience, I venture to say you will find people only too willing to carry out any suggestions you make for promoting their comfort and safety, if made in a proper spirit of deference to their wishes; the *suaviter in modo* must never be forgotten here.

Next to the question of the bedstead arrangements will come the important one of the fire grate. It may be of modern and unexceptionable construction, or the reverse, and in that case it must receive your attention, for no one more than a nurse knows the misery and discomfort of a smoky bedroom fire. Now we cannot always prevent or remedy the evil, but that is none the less reason that we should not try to do so. Many people object to having a fire in their bedrooms, and in that case it may have been a year or more since there was a fire in the room. Get information as to this. If a fire has been in the room recently, make inquiries with respect to the "harmony" or otherwise between the grate and the chimney. If they are reported to be good friends you may rest content; but if, on the contrary, you hear of "incompatibility of temper," leading to violent outbursts of smoke, you had better look to the matter at once. Have a fire lighted in the day time when the lady is out of her bedroom, and judge of the state of things for yourself.

If you consider the chimney is at fault, request to have it swept at once, and that may settle all difficulties; or if the grate, that also may be put right. You may ask me, What has all this to do with a nurse? I answer, everything that conduces in the smallest degree to the comfort and well-doing of your patient *is* your duty. A smoky bedroom is an intolerable annoyance to an invalid, and should be spared her whenever possible.

Next to the bedroom arrangements, you should ascertain what, if any room is to be set apart for your use during your attendance, for a great deal goes to this matter. The most convenient arrangement, of course, is to have a room leading from the lady's bedroom, with another door opening on to the landing; and it is all the better if there be a grate in the room, as here you will most likely have to sleep. In addition to your bedstead there should be a washing-stand, with toilet set, supply-can for fetching cold water, foot-pan, and a slop-pail with cover, to be kept exclusively for your use, and nothing to do with the servants. A good-sized towel horse, a table, a couple of chairs, and a small chest of drawers will about complete the furnishing of the room, which must be much the same wherever it may be situated. If there be no cupboard in the room, a shelf or two fixed in a recess, or a small movable cupboard or shelves, are very useful for putting things in or on, and will enable you to have everything handy, and also to keep your room tidy.

In this room you will keep all nursing and bedroom requisities, viz., slippers, bed-bath, foot-warmer (which you must never be without); look after these as soon as you come. My nursing readers will understand me when I say that what a ward kitchen is to a ward (on a small scale), a nurse's room is to a bedroom; and if made wise use of, will be a comfort to the patient and everybody else in the house.

Let us consider what articles are necessary, and should be kept *exclusively* for the nurse's use. A good-sized block tin tea kettle (three pints, say), two block tin saucepans (half-a-pint and a pint and a half respectively), a small toasting fork, tea-pot, cafetier, and a gruel strainer. As to crockery, feeder, breakfast and tea cups and saucers (two of each, say), a small plate or two, salt-cellar, and pepper-box, two basins

for mixing gruel and arrowroot, and table, dessert, and tea-spoons, knife and fork, milk jug, and sugar-basin. Now as to "stores"—tea, coffee, cocoa, sugar, oatmeal, arrowroot, small can of condensed milk, Brand's beef-essence, all of which are quickly prepared and may be required at any moment day or night. Two or three table napkins, d'oyleys, and a small tray, or salver, for serving things on, should be included in your list; also tea-cloths, dusters, and a rough cloth or two for washstand use, for the less a nurse has to depend upon others the better: and trifling as these details may appear on paper, they make up the wide difference between "muddle" and management. A few days will suffice to get all these things together; they are so inexpensive anybody can afford them, and so necessary no one should be without them at such times.

With respect to things specially required for the time of labour, you will want a piece of waterproof sheeting two yards long, which I generally have cut in half, and a good supply of old sheets or counterpanes (these last are the best if they are quite soft) for drawsheets, and an old thin blanket. Have all these things well aired and put away in the drawer in your room ready for immediate use.

At this point I may as well refer to those modern "substitutes" for bed and personal use which have been brought before our notice for use in Obstetric Nursing, over the extemporised contrivances we have hitherto used. My women readers, lay and professional, will quite understand the drift of my remarks when I say that, with regard to these aforesaid "substitutes" over other appliances, the question lies between washing or cremation. Now, having an obstinate prejudice in favour of soap and water, combined with an illimitable faith in the purifying influences of sunshine and fresh air upon all wearing apparel and bed linen, &c., I am distinctly in favour of washing (whenever practicable) over cremation, and, as far as our portion of nursing work is concerned, believe that common sense laundry arrangements meet all our needs.

Whilst nurse is making these prudent preparations for her coming work, she should keep a watchful eye upon her patient, and be observant of those indications that mark the approach, though not the actual commencement, of labour,

which we will call signs and symptoms. The former can be seen; the latter can only be felt and described by the patient, and you must give a thoughtful heed to all she tells you about herself.

The surest premonition of critical changes is the descent of the uterus towards the pelvis, which leads to a diminution in size and a peculiar alteration in shape of the abdomen, which has been described as a "flattening" or "sinking." It is a sign of great diagnostic value in a subjective sense, and should never be overlooked by a nurse. We may know by it that the high-water level, as it were, of gestation has been reached, and that the tide is on the ebb. The first effect of this downward movement is to afford the woman a sense of relief, as far as pressure troubles on the diaphragm and abdominal viscera are concerned. This feeling of "wellness," if I may so call it, often leads to imprudences on the part of the patient, especially if young; for, lulled into a specious security, she is apt, unless advised to the contrary, to go too far, or remain too long from home, with oftentimes awkward, if not serious results. Nurses, too, have been heedless in this matter, and on the strength of the improved (?) state of things, have gone out for the day, to find themselves absent when most wanted. No observant nurse would do this, well knowing that active symptoms of labour may come on at any hour, after the changes described; and she, at any rate, should never leave her post of duty.

As the uterus begins to press more upon the pelvis, the patient becomes awkward in her carriage, and has a peculiar gait that can hardly be described, but any nurse can recognize it, and knows that it marks still further downward changes. At this time the patient may complain of numbness or tingling, due to pressure on the pelvic nerves, down one or more of the lower limbs (rarely both), which is very distressing to women; and they often tell you, they having "all their pains in their legs," there is nothing but delivery to afford relief.

When these pelvic pressure symptoms declare themselves, it is very desirable to pay attention to the state of the bowels, and I think a purgative that acts upon the whole of the intestinal tract is far preferable to injections, which only act on the rectum. A couple of compound rhubarb pills, taken

at bed-time, and, where there is any little stomach derangement, followed the next morning (fasting) by a seidlitz powder, taken in half a tumbler of warm water, with a few drops of essence of peppermint, or ginger, added, is a safe, simple, and efficacious form of medication. It is at once aperient, saline, and carminative; it relieves the kidneys as well as the bowels, and I always found it beneficial, *when given under the conditions* above described—viz., symptoms of the nearness, but not of the actual commencement of labour. You must keep the patient in bed all the morning, and give her a cup of hot tea with plenty of milk in it, about an hour or an hour and a-half after she has had the powder. It is wise for her to keep in the house all day.

Now, as you may have to administer seidlitz powders during the lying-in period, let me say a word to you as to *how* to prepare them, and *when* to give them, for much of their efficacy depends on these simple matters. Dissolve the large powder in half a tumbler of *hot* water the night before, and stir it well round with a spoon; by this means you will get a thorough solution of the salts, which is important as to their aperient properties. In the morning take rather less than half a tea-cupful of *hot* water, and put the acid powder into it; you can add a few drops (twenty to thirty) of essence of peppermint or ginger. Put the tumbler on to a plate or saucer, and when your patient is ready mix the solutions together, and, stirring them up well, give them in a state of effervescence. These powders should always be given in *the morning*, on an empty stomach, and in warm water.

To resume our task. Increasing symptoms of pelvic pressure more and more manifest themselves, and the neighbouring organs show the influence of the changes going forward in the uterus. The bladder becomes irritable, leading to micturition; the rectum is similarly affected, giving rise to teasing tenesmus, and then we shall see the benefit of the simple measures before advocated, which will greatly tend to mitigate these distresses. At this time there is often an abundant flow of mucus from the vagina, which, if tinged with blood, will clearly show that labour is incipient, and you must at once make the necessary preparations.

Your first care must be the bedroom. Have a fire lighted, or laid ready for lighting. It is a good plan when the time of labour is approaching to have a fire laid in the bedroom and in your room beforehand, with a supply of fuel brought up, so that at any hour of the day or night you can have a fire ready, a very important matter in a labour room. Open the window top and bottom, and if your patient is in another room, the door as well, so as to get a good current of air through it. Remove all slops and see that there is a good supply of cold water in the toilet jugs. Have a kettle in the room and keep it well replenished, so as to have hot water ready without the slightest delay. See that there are clean hand towels, soap, nail-brush, and a pot of vaseline (carbolated is the best). If there are any clothes about the room have them put away, and if in the daytime get one of the servants to help you clear up any litter about, and everything dusted and made tidy. You will also require assistance in making up the bed, after the bed-linen has been properly aired.

Now as to the bed. The lower blanket and sheet must be put on as usual, and see that they are well tucked in all round, and placed perfectly smooth; the bolster can be put in its place. Before putting on any more bed-clothes, you must prepare the bed for delivery, and in order to facilitate all that has or may have to be done during labour, it is an *undeviating rule* to prepare the *right side* of the bed for that purpose. This may seem to you a simple thing, but it is one of the most important nursing arrangements in connection with the work that lies before you. We shall have to prepare two draw-sheets—one for delivery, and the other for afterwards. The piece of waterproof sheeting, which, as I said in a previous paper, should be from one-and-a-half to two yards long, must be cut in halves. The draw-sheet for delivery is placed towards the foot of the bed, and on the *right* side. First we fix the waterproof *over* the lower sheet and blanket, so that it can be readily moved afterwards. Have it spread smoothly over the sheet, and tucked in at the foot, and under the side of the bed as far as it goes—not merely under the mattress, but over all the bedding, so as to protect the sides from possible staining. Be sure to fix this waterproof firmly; remember, if that slips,

all slips. Over this put an old sheet or counterpane, folded in as many thicknesses as its size admits of; it should almost cover the waterproof.

Some teachers of Obstetric Nursing instruct their nurses to place the waterproof sheeting *under* the lower blanket, next to the bedding, and in one length along the side of the bed; but I prefer to have it divided and placed as I have described to you, for in my judgment, the less we have of it, and the sooner we can dispense with it, the better in our portion of nursing work.

Now prepare the upper draw-sheet. The second piece of waterproof sheeting should be placed at some distance from the bolster, so that the shoulders of the patient do *not* rest upon it; tuck it under the mattress only, and along the side of the bed. It should reach just above the hips, and not quite to the knees. Over this fold a piece of blanket, as thin and soft as possible, and in as many folds as you can. This is not to be fastened down in any way, as it will have to be removed soon after the patient is put to bed. Having completed these arrangements, you finish making up the bed. Let the top sheet be well tucked in along the *left* side of the bed and at the foot, and then carried up to the top of the bed, *over* the draw-sheet; and in putting on the blankets, you must be careful not to have too much folded over at the top. Nothing is more oppressive to a recently delivered woman than a weight of bed-clothes on her chest. Say there are two blankets. Place one well up to the head of the bed, and fold it over as far as it goes; then take the second blanket and carry it up just *below* the fold over of the first blanket, so that there are only two thicknesses of blanket turned over. Tuck the blankets under at the foot and along the *left* side of the bed. Then put on the quilt, carrying it up to the top of the fold of the first blanket; remember, this too is to be placed *single*, and what there is to spare in length to be turned over at the *foot* of the bed, the same as the second blanket. The top sheet is then turned over the quilt and blanket as usual.

Now the whole of the bed-clothes you have put on must be turned over from the *right* to the *left* side of the bed, longwise, taking care not to disarrange them, and having them placed perfectly smooth and straight, and leaving the

whole of the right side of the bed perfectly free. You will see the benefit of these arrangements as we go on. The two pillows must be placed at the top of the lower draw-sheet, and over the folded back bed-clothes, crosswise to the bed. If there be an eider down quilt it must be carefully folded up, and placed on a chair towards the head on the *left* side of the bed, so as to be handy when wanted. Never have them on the bed during labour; they are apt to get stained, and are in the way. If there be any vallance to the bed, unfasten it at the foot, and turn it back half-way towards the bedstead, and on the *right* side. You might do the same with the vallance at the foot. Then place a piece of old carpet, or drugget, or ticking on the floor at the foot of the bed, well under it, and carry it *beyond* the lower draw-sheet; this will effectually protect the carpet from possible staining.

Every nurse who has any regard to her own self-respect and nursing skill will perform her duties with every possible regard to cleanliness, decency and order, for all these things tend to the comfort of your patient. Having finished the preparation of the bed, you must put the night-dress, binder, napkins, and other linen required during labour, to the fire. See that you air them thoroughly: do not crowd the clothes-horse with articles, but spread them out, so as to have everything dry and warm.

The various symptoms I have described to you as announcing the nearness of labour have been more or less of a passive character; but we are now coming to a more active state of things, and the advent of the pains of labour marks the beginning of the end, and with them a nursing point of some difficulty and much importance. During hospital training a nurse has a fair opportunity of watching the progressive course of labour, and books describe them to her: but without thoughtful observation on her part neither books nor hospitals will be of much use when she has to think out for herself the question as to when she should summon the doctor.

The more exalted the social position of your patient, the more, in all probability, will the matter be in your hands; and a nurse has to consider the state of the case, the wishes of her patient and of her friends, and, as far as possible, the convenience of the doctor. Some women are extremely

timid, and insist upon having the accoucheur sent for long before he is required; others are just the reverse, and the nurse has the greatest difficulty in getting the patient to consent to his being sent for until almost the last minute. In these cases the nurse should have the accoucheur summoned without letting the patient know anything about it, so as to avoid any trouble. But in either case, do not cross the patient; give in to her wishes—if not really, apparently. Any “hard and fast” rule, based upon the *duration* of labour, is of little practical use to a nurse, for we all know with what rapidity labour often begins and ends; hence the necessity for a nurse to be always beforehand with her preparations. As this matter of summoning medical aid is a somewhat difficult part of nursing duty, in order to give you some definite guide in these cases we will just briefly describe the course of normal labour, and by this means better enable you to watch the symptoms that mark its progress.

CHAPTER II.

DUTIES DURING LABOUR.

SYMPTOMS OF ACTIVE LABOUR—INDICATIONS FOR SENDING FOR MEDICAL AID—PREPARATION OF THE PATIENT FOR DELIVERY—WHAT DRINK TO GIVE HER DURING LABOUR IF PROLONGED—HOW TO ASSIST THE ACCOUCHEUR DURING THE BIRTH OF THE CHILD—RECEPTION OF INFANT—NECESSARY ATTENTIONS TO THE PATIENT IMMEDIATELY AFTER DELIVERY—ATTENTIONS TO INFANT AT BIRTH.

THE only thing you have to guide you as to when labour has really commenced is the "pains," and there are three points you have to observe with regard to them, viz., length, strength and frequency. As the intervals between the "pains," decrease their duration increases, and these two facts are quite diagnostic of "progress," taken in conjunction with increased force, and in my judgment no prudent nurse would neglect to send for the accoucheur at this point of the labour.

The muscular contractions of the uterus, commonly called "pains," have in parturition two objects to accomplish—the liberation of the head from the womb, and its passage through the pelvis, ending in the complete expulsion of the child. There is only one set of uterine muscles concerned in this task from first to last—the fundal; but they have to act under widely different conditions, and to overcome widely different resistances, and hence has arisen an artificial division of labour into "stages," as you heard in your hospital days. In the so-called first or dilating "stage," the force of the muscular contractions are controlled and modified by a fluid medium, enclosed in a singular membrane, called the amnionic sac, and their combined influence is exerted in the first instance to overcome the resistance of the fibrous tissue of the cervix, to effect its expansion, and in this way open the mouth of the womb. In this dilating task of hers, Nature uses just as much muscular force as she wants, and wants no

more than she uses, and the superfluous force, if one may so say, is reflected back on, and diffused through, the waters of the foetal sac, which serve, as you know, to protect the foetus from the injurious effects of prolonged pressure; and it is this fluid medium that gives to the "pains" of the dilating stage of labour their peculiar and diagnostic character. They are slight, short, and teasing, unaccompanied by voluntary effort, and appear to be of little effect. The "pains" recur at intervals, from fifteen to twenty minutes, sometimes more; but none the less surely are great changes coming on. As the resisting tissues more and more yield to the forces brought to bear upon them, an increased amount of muscular force is brought into play, the "pains" become more frequent and forcible. The foetal sac, no longer held up by the cervical tissue, depends towards the vagina, and the weight of the waters and the force of the contraction rupture the membranes, and the imprisoned waters rush out, having completed their task, and the so-called "first stage" of normal labour is ended.

In some hand-books nurses are enjoined not to send for the accoucheur until this most critical conjuncture occurs, but as a teacher of Obstetric Nursing I cannot concur in any such hazardous course, for in numberless instances the birth of the child follows so rapidly after its liberation from the foetal sac, that the accoucheur would in all probability find when he did come that the baby had preceded him. I prefer myself to instruct nurses how to watch thoughtfully and intelligently the signs and symptoms that mark the first stage of labour, which in the great majority of cases falls under their care, and that is my object in bringing before their notice the phenomena that constitute it.

We must now return to our patient, who by this time requires her nurse's attention, and will doubtless afford her a very practical illustration of the interesting details we have just been chatting over on paper. We have prepared the bed-room and bed, and we must prepare the patient, now that active symptoms of labour have declared themselves. If it is the daytime she must be undressed, all the clothes required being a flannel or woollen skirt, and one under-skirt; if the patient wears a chemise keep that on, and turn it down to the waist. Fasten the skirts with a safety pin and

in the front; do not forget this, as they may have to be loosened at any moment, and there should be no delay in finding out where they are fastened. If the patient wears a flannel vest keep it on or replace it by a clean one, as its removal would very likely give her a chill. Put on a clean nightdress and fasten it round the waist, above the hips, with a good-sized safety pin in the front; stockings and slippers are always to be kept on until after delivery; garters to be removed. There must not be the slightest pressure upon any part of the body.

A loose, long wrapper must be put on, and kept on as long as the patient is well enough to keep up; but have the flannel bed-jacket ready to put on when she lies down, as you must then take off the wrapper. Do not forget this, as the long dressing-gown is quite unsuited for wear during delivery, and more than once I have seen them spoiled through this negligence on the part of the nurse.

If the labour comes on at night, put the woollen and under-skirt on over the night-dress, and turn it down to the waist, but do not remove it; fasten the skirt and the clean night-dress in the front as before directed with a safety pin. Put on the clean night-dress. If the patient is accustomed to wear a vest habitually, put one on before the night-dress; fasten the clean night-dress in the front after turning it well up to the waist and above the hips; put on the stockings and slippers and the wrapper, and keep it on so long as the patient is able to walk about. But whether the labour happens in the day or night your duties are the same, and of course you go on quietly with all necessary preparations. Fill up your kettle, and keep up a plentiful supply of hot water during the whole of labour. It will be as well to bring the kettle to the bed-room fire and keep it there, so that hot water can be obtained at a moment's notice, should it be required for an intra-uterine injection in case of post-partum hæmorrhage occurring, as many accoucheurs resort to that valuable remedy, and if they had to wait for the hot water the remedy might come too late.

See that you have everything ready for the doctor's arrival—hot and cold water, nail brush (I like the india-rubber ones myself), towels, soap, vaseline, and napkins, thread and scissors. Now as to thread; never have glazed

thread; it is too smooth and it is apt to cut through the vessels of the cord. I have known more than one case of umbilical hæmorrhage caused by this disaster. The common whitey-brown skein thread, without glaze, is fairly satisfactory. The number of strands should be not less than four to a ligature, and as to length there is some divergence of opinion amongst accoucheurs. Men prefer thread as a rule cut in lengths of ten to twelve inches. At each end of the lengths tie a knot to keep the strands together. I like them papered myself, and keep them in my belt, so that I can get at them handily; and as you will have to hand them to the accoucheur, it is a good plan for a nurse to paper the threads and put them in her belt. Every nurse should wear a belt on duty. The best sort of thread for umbilical ligaturing is a coarse kind of hempen thread—not very beautiful to look at, I confess, on account of its dark hue, but very reliable. About four strands if fine, and two if coarse, suffice for a ligature in seven inch lengths.

Now as to the best sort of scissors for a nurse to have for severing the cord, there is but one reply—*round*-pointed, in fact, draper's scissors, not more than *three* inches long. They are absolutely safe; you cannot hurt the infant with them. No nurse should be without a pair of these scissors. You will see how useful they are in Obstetric Nursing as we go on. The scissors should be attached to your belt, by a piece of silk cord, or narrow strong braid, about thirty inches long, and the scissors themselves stuck into your belt, ever ready for use, and you will hand them with the thread to the accoucheur when he requires them. When he has severed the cord, wipe your scissors quite clean, and when you wash baby, wash your scissors too. Always keep them perfectly clean, and dip them when necessary into the antiseptic solutions we shall discuss before long. As the labour progresses you must get everything requisite in the room and handy for use. You have prepared the bed already; bring in the footpan from your room, and place it at the foot of the bed, on the left side, ready to receive the soiled linen. Have ready the woollen shawl I spoke about, or a small blanket, to cover over the patient when she lies down. Have on a table as near the bed as you can a bottle of clean, fresh drinking-water and glass, some pale brandy,

a fan, a bottle of smelling salts, and two or three clean pocket-handkerchiefs. With respect to smelling salts, I always have them perfumed for my patients; they are so much more pleasant to inhale. I hardly know what my chemist puts in, but I know that essential oil of lavender plays a very pleasant part of the "mixture," and women all like it. Have a fan with the other things on the table; those cheap and popular Chinese fans are very good for fanning, and so light to hold, but of course you must have what fan you can get. There is another little matter, too, I may as well call your attention to, as a handy contrivance for administering chloroform during the second stage of labour, which, as you know, is only given to a slight degree on these occasions. Have a perfectly clean, dry tumbler, and half fill it with medicated white cotton wool, and when the chloroform is required, sprinkle it on the wool, and lightly hold the tumbler to the nostrils and above the mouth, so that she can inhale it on the access of a pain. Remove the tumbler when the pain ceases. This simple plan is preferable, to my mind, to sprinkling the chloroform on handkerchiefs or napkins, which wastes a good deal. Of course this is merely a suggestion, and you will have to carry out any plan the accoucheur may direct. Labours, as I told you before, may be short or long. If prolonged, the patient will most likely require some sort of refreshing drink. A cup of freshly made tea (all black is preferable) with milk, is nearly always acceptable, especially at night. Sometimes an effervescing drink is required. You should always have a syphon of soda water in the room (or a champagne corkscrew in a bottle of soda water), so that turning on the tap, you can mix just as much as you want with milk or lemon juice, according as may be desirable. As a rule, thirst accompanies labour, especially when protracted, and different kinds of refreshing drinks become a nursing point. In cases where there is much depression, hot milk is very reviving, with or without a little pale brandy, but that will depend upon the instructions of the medical attendant; but as to the beneficial effects of hot milk in protracted labour, especially in the first stage, there can be no question, and, as you have a saucepan in your room, you can make it

hot as required. When these advanced symptoms of labour shew themselves, you must have brought up in your room, supposing it be late in the evening, *all* that you may be likely to want during the night—milk, eggs, a few biscuits, pale brandy, as I said before, in the way of refreshment; fuel for the fires; an abundant supply of water; footwarmer ready to hand, and all other things necessary.

At this moment let me just pause to point out to a nurse that the ever-present thought in her mind (and I enjoin her to keep it there), during all these preparations for delivery, is the possibility of serious hæmorrhage afterwards, and the supreme necessity there is for precautionary measures to meet and mitigate the evil should it unhappily arise. If the accoucheur has to *wait* for what is necessary the delay will add intensely to the dangers of the crisis, and certainly not add to your reputation as a thoughtful Nurse.

We have briefly described to you the characteristics of the first stages of labour, and you will now have to observe the severer symptoms that mark the so-called second or expulsive stage. The pains increase in frequency, in force, and in duration; the patient can no longer keep up, and you must assist her on to the bed, and position her for delivery. Take off the wrapper and put on a short flannel jacket, which should be a perfectly loose fit; place the patient on the lower draw sheet at the foot of the bed, and, of course, on the right side of it. She must lie on her left side, face towards the foot of the bed, and her head on the pillows that are at the top of the lower draw sheet and cross-wise to the bed.

You may now perceive that a most remarkable change has come over the character of the labour, quite different from the "pains" that marked its incipient and early progress, which is due to a new element altogether, called voluntary effort or "bearing-down pains." Now what is the cause of this? The uterine contractions are precisely the same as they were at first, although they are no longer controlled by a fluid medium, and consequently they act directly upon the body of the child; but this is not the cause of voluntary effort.

The uterus is an involuntary muscle, and a woman has no more control over its muscular action than she has over the

muscular contractions of her heart, though both can be influenced, as you know, in a singular degree by emotion, acting through the sympathetic nervous system; and let me pause, just to impress this fact upon your mind, and to show you how tenderly, though firmly and cheerily, you must ever act towards a woman in labour, as pleasurable or adverse emotions have a distinct influence upon its course, more especially its early stage.

But to return to the subject of the expulsive stage of labour. At this supreme conjuncture Nature calls to her aid an auxiliary force of the most momentous importance—the abdominal muscles, which are, as you know, voluntary, and therefore under the control of the will, and hence the patient exerts her will and “bears down” during the uterine contractions (“pains”) that mark the second stage of labour, and the combined influence of these two different sets of muscles completes the birth of the child.

What we have to do now is to assist the patient in these efforts, the chief point being position. Lying on her left side, with her knees drawn up, and her feet firmly fixed against the bedpost, or some part of the foot of the bed; and to still further assist her efforts a pulley should be fixed at the bedpost, and on a level with the draw sheet. The best thing for a pulley is an old silk scarf; it is so soft to the hands. First put the ends together level and tie the scarf to the bedpost, and then fasten the ends together and make a loop for the patient to pull at. Pass the loop *over* the left foot and leg, and between the knees, before handing it to her, and it must be adjusted so that she can pull upon it rather short than otherwise, so as to get full power over the pulley, which is of course only to be used during the “pains.”

Some teachers instruct their nurses to place a pillow between the patient's knees to support the right leg, during the pains, but I do not advise that plan myself; the pillow gets in the way, and oppresses the patient. I prefer to have the right knee supported by the nurse's hand during the “pains,” and kept up to a level with the right hip, as the better means of affording help.

Now as to the position that the accoucheur and the nurse should respectively take up at this stage of labour. The

doctor's chair should be placed on the right side of the bed towards the foot: on the bed beside him should be placed four or five napkins, and the pot of carbolated vaseline. The nurse should stand at the foot of the bed, rather towards the left side, as in this position she can best attend to the wants both of patient and accoucheur. *Never* get in front of him; nothing can be more embarrassing, and when it is necessary for you to support the patient's knee, you can do so where I have told you to be more easily than anywhere else. All that you have to do for, or give to the patient must be done or given on the left side of the bed, towards the foot of course; you must leave the right side of the bed free for the doctor.

If you have to give the patient any drink, put your right hand and arm under the top pillow, and gently raise her up from the shoulders, and then with your left hand give her the tea and then lay her down again. Some nurses seize the patient by the back of the neck in the most unhandy manner, and generally spill half the drink over her jacket and night-dress, to say nothing of nearly choking her! If you have to fan your patient go round to the left side of the bed, and, standing over her, but not too near to her face, *gently* fan her, which is far more soothing than the rapid "flicking" of the fan which some nurses adopt. Always keep the patient's face free to the air, and loosen the night-dress and jacket at the throat.

At this point I must remind you that, when you position your patient for the delivery, you *must in no wise* interfere with the arrangement of the bed clothes, as I directed you to place them; leave them as you placed them until you put the patient into bed after her delivery. To cover her over during labour, have a small blanket, or large woollen shawl (I prefer the latter), which is easily removed or put on, just as may be necessary; also take out the safety pin that fastens the skirts, and loose them from the waist, so that the uterus can be completely, and at once, controlled by the accoucheur during and after delivery.

If you have to render any assistance in this direction, go round to the *left* side of the bed, just *behind* the patient, and with your left hand press firmly upon the fundus (which you have been taught to define in the hospital), and

so follow down the head, or, if after delivery, the uterus, and keep up the pressure so long as you are directed to do so. If the bed is very wide you may have to get partly over it to execute this manœuvre, but remember it is better to do that than to get on the *right* side of the bed, behind the accoucheur, as you might be in his way and rather hinder than help him.

As the labour progresses and the birth of the child gets near at hand, you must have the receiver ready to take it in, with one or two napkins; place them at the foot of the bed, or on the rail of the bedstead toward the left side; the thread and scissors you will put in your belt, as I told you before. The best thing for the infant's receiver is a square of new Saxony flannel, or fine Welsh is as good. The *worst* things are knitted or crotcheted *woollen shawls*, for they distinctly embarrass the "baby," who invariably, and without distinction of sex, entangles his or her fingers and toes in the meshes, leading to "difficulties" in that direction in the matter of extrication from same. The receiver must *never* be of *coloured* flannel, whether new or washed; the same with the small shawls if you are obliged to have them.

During the birth of the infant, if you are not engaged with the uterus, you remain at your post at the foot of the bed, and support the patient's knee as I directed you. Her *right* foot should of course be placed against some part of the foot of the bedstead, and your supporting the knee keeps her right leg in position, and this support should be given until the child is born; you then gently lower it, and remove the pulley from the patient's hands, and place her head comfortably on the pillow; it is apt to get into an awkward position during the last expulsive pains. Turn her face to the air, gently wipe her face and forehead with one of the clean handkerchiefs I told you to have handy, and give her if she wishes it (as most women do) some drink—a little warm tea with milk in it, or cold brandy and water, if preferred; draw the night-dress and jacket over the chest to avoid chilling after the profuse perspiration that often accompanies the last pains of labour.

When the infant is separated, take him or her (and we will give the *pas* to the predominating sex on this occasion), from the accoucheur in a napkin, that you have just pre-

viously warmed by the bed-room fire ; turn him over your *left* arm, face *downwards*, so as to drain out the mucus from the mouth and nostrils ; then cover him over with the flannel receiver, and lay him down on the left side of the bed, towards the top, and under the bed clothes. Take another napkin, and wipe the head, face, nostril and eyes ; put a corner of the napkin over the forefinger of your right hand, and clean out the mouth. Having done all this, place the infant on his right side, leaving the face open to the air, and the limbs perfectly free. An infant should never be "swaddled up," but have full liberty to exercise his limbs and lungs to his heart's content, and engaged in this laudable occupation you may safely leave him, whilst you attend to more important duties.

There is not the slightest necessity for hurrying on the washing and dressing of the infant, it is *better* deferred until the pulmonary circulation is established. The object of keeping him on the mother's bed, and under your eye (as it were), is to watch for the possibilities that may occur to a newly-born infant—choking from an accumulation of mucus in the trachea or umbilical hæmorrhage, both of which disasters require instant attention. The former is not unusual ; the latter is very rare, but extremely serious, and if unchecked inevitably fatal. Hence you see the importance of keeping the infant under observation, whilst you are engaged in the imperative duties demanded by the mother, and if he were in another room how could you do this ?

From the birth of the child to the expulsion of the placenta, the patient is under the exclusive care of the accoucheur ; and all you have to do is to help him in any way he may desire. Let him have a good supply of napkins, and as they are soiled put them into the foot-pan I told you to have ready at the foot of the bed. Remember you are not to leave the room until the delivery is completed, nor in fact if you manage thoughtfully need you scarcely ever leave the room for anything during the crisis of labour, and for this end I advised you as to your preparations for it. When the placenta is delivered, put it in a clean chamber, and keep it dry, it may have to be examined, and that cannot be done satisfactorily if it is wetted ; also this plan facilitates

the cremation thereof that will have to take place as soon as practicable.

The length of time a patient will have to lie still after delivery depends upon the character of the labour, and as to how much and in what way she is affected by it, and also—most important of all, the condition of the uterus, and in my humble judgment that ought to be kept under close observation for at least half an hour even under favourable circumstances; and no prudent accoucheur would sanction any change of position until the post-partum contraction of the uterus gave evidence of the safety of the patient. When you have instructions to remove the patient, take off her stockings and slippers, remove the pillows from the foot to the top of the bed; one will be sufficient for the patient's head, and put the other on the bolster next to it, and on this pillow put three or four napkins fresh warmed, and handy for use. The doctor and nurse must then carefully assist the patient from the lower to the upper draw-sheet. *Keep the skirts on* round the waist, place her straight on her back, and then turn the bed-clothes (arranged as I told you), from left to right, and from top to bottom; by these manœuvres in a few seconds, the patient is covered all over and chilling avoided. I need scarcely tell you that chills are *most* serious to a recently delivered woman.

Before removing the skirts, place your hand firmly on the uterus, when you may possibly press out a clot or two, work the uterus gently for a few minutes, and if the contraction is satisfactory remove the patient's clothes. Take a napkin and place over the lower part of the abdomen; direct the patient to draw up her knees, and raise herself on her heels, and so lift herself up from the bed; you then immediately withdraw the clothes from the hips, the patient lowers her knees, and you take her feet one at a time from the soiled clothes; remember you do all this under the bed clothes, and without exposure you put the soiled clothes into the lower draw-sheet, wrap them all up together, and place them in the foot pan ready for removal—place warm napkins to the vulva, and put on the eiderdown quilt if the patient feels chilly.

CHAPTER III.

DUTIES IMMEDIATELY AFTER DELIVERY.

OBSTETRIC BINDING—METHODS OF—REASONS FOR—COMPRESSES TO THE UTERUS—WHY USED—MODE OF APPLICATION—UTERINE CONTRACTION—IMPORTANCE OF—ARRANGEMENT OF THE PATIENT AFTER BINDING—THE CIRCULATION—WARMTH TO THE FEET—THE PULSE—STATE OF THE UTERUS—AMOUNT AND CHARACTER OF FLOW—IMMEDIATE NOURISHMENTS—HOW TO GIVE THEM—REPOSE—SLUMBER—HOW TO PROMOTE THEM—STATE OF THE BLADDER—RELIEF TO.

THE first duty when you have put your patient straight after her delivery is to bind her, and as good binding plays a large part in good nursing, a few remarks on that subject may not be otherwise than opportune.

Why do we bind? And what is the real value of the obstetric binder? In your training days you may have heard "binding" spoken of in connection with the word "contraction," and such expressions as "exciting," "promoting," and "maintaining" contraction may have been familiar to your ears. I think I can show you that neither the binder nor binding has anything to do with contraction, and as regards the uterus, the binder has but little, if any, value, and might almost be dispensed with. The obstetric binder has a value, as I shall point out to you in due time; but promoting contraction is certainly not the value that it has.

The chief stimulus to uterine contraction is cold and well-applied friction, and in relaxed *post-partum* conditions of the uterus we resort to both these measures; but if the cold be not constantly renewed, the contraction excited by its first application is not maintained, as you know by clinical

teaching and experience. The proper manipulation of the uterus in cases of threatening or actual *post-partum* hæmorrhage is a necessary and important part of nursing duties, and every nurse should be instructed to perform it *rightly* and effectually. The first point is to define the uterus accurately. The manœuvre can only be taught at the bedside; but there is no harm in reminding you how it is done. Immerse your *left* hand in cold water above the wrist; place it *flat* on the abdomen towards the right side, and in the direction of the right iliac region, where you will find the uterus. Put the *palm* of your hand over the fundus, and with your whole hand make firm, but equable pressure in a downward direction. If you are fortunate enough to possess a well-arched palm your control over the uterus will be all the more complete, and you will feel it lessening and hardening under your grasp. As your hand gets warm the uterus relaxes and enlarges, and you will have to re-apply the cold from time to time, and repeat these manipulations until the contraction is sufficiently satisfactory to permit of your desisting from them. At this point I must call your attention to the extreme importance of the *palm* of the hand in midwifery nursing, both in its maternal and infantile portions, especially the latter. A great deal goes to the hand, as you will see as you go on. A thick, heavy hand is out of place in our work; and a good obstetric nursing hand is a distinct gift. The palm should be hollow, and the whole hand strong, firm, and *light*—the lightness of well-balanced strength, with a reserve of force behind it. A feeble hand is a heavy hand, and not often steady.

Returning once more to the *post-partum* condition of the uterus, we will assume that you have just had a very satisfactory clinical experience of the great physiological fact of uterine muscular contraction, and that your well-directed manipulations have resulted in a practical demonstration of it. In addition to this paramount safeguard against *post-partum* hæmorrhage, there are other factors involved, too interesting and important to be altogether overlooked, though probably not so well known to my professional sisters, and for that reason I will just very briefly outline them, somewhat imperfectly, as my remarks are intended to call your attention to certain points rather than to com-

pletely elucidate them, which would not be within the range of these papers.

The blood demand of the gravid uterus upon the general circulation is an enormous and ever-increasing one. To keep pace with this imperative task and to meet the singular exigences of that organ, the nutrient vessels that have to nourish the uterus are very different from the blood vessels in other organs of the body. The arteries of the gravid uterus are greatly increased in size, and all through the substance of the uterus there are infinite numbers of anastomosing arteries, and these arteries are *serpentine* in their course, which, as my readers know, is quite unlike the arteries in other parts of the body, where they are straight tubes. Now what is the object of this exceptional structure? When the uterus contracts the spiral coils of the arteries are so compressed by the contractile tissue that surrounds them, that the force of the arterial blood current is lessened, coagulation is favoured, and the mouths of the vessel plugged by innumerable thrombi.

The veins of the gravid uterus are still more remarkable in the peculiarity of their arrangement as compared with other veins. Their relative size to the arteries is greater. They are composed of a number of *large short trunks* communicating directly with each other; their *coats are single*, composed only of the lining membrane of the veins, which is intimately adherent to the fibrous tissues of the uterus; they have *no valves*, but if the surrounding fibres contract, temporary valves are formed, which break off the communication between these short trunks; and these extemporised valves, which anatomists describe as semi-lunar or falciform, are formed by the lining membrane of two venous tubes as they meet together by a very acute angle, and this arrangement of the uterine veins and the contractile fibres of the uterus arrest any hæmorrhage that may flow from them. Hence we see that the anatomical relation of the uterine arteries and veins to the contractile tissue of the uterus is such as to moderate the force of the arterial circulation and prevent a regurgitation of venous blood.

This very brief and imperfect sketch is intended to call the attention of my professional sisters to the stupendous importance of the subject. Were it not for these wise and

merciful safeguards against the perilous hæmorrhage that inevitably follows parturition, no woman would be a mother but once; and thus we understand the value of the general principle, that *contraction of the uterine muscular fibres is the essential means* of arresting uterine hæmorrhage.

I need scarcely tell you to keep the binder spread open to the fire, with three or four of the largest napkins you have about, so as to have them all warm. You take the binder and fold it in half long-wise, pulling the two edges perfectly level at each end; roll it perfectly smooth and straight to about two-thirds of its length; fold three or four of the napkins into squares, and have another not folded at all; place the binder and napkins on the left side of the bed, about the middle; and, of course, our trusty pins, stuck into a small pincushion, at the *top*, not at the sides, as they are sometimes stuck. A nurse should have a *pocket* pincushion, and keep it there. Pins have a remarkable habit of *not* being handy when wanted, unless kept in safe custody.

It is a *rule absolute* that the binder is to be applied as the patient lies in the recumbent position she was placed after her delivery, and I do not hesitate to say that all the real practical good you do by binding would be *nullified* were any other adopted. You may ask, why this position? I will tell you. The uterus after delivery closes laterally, and when the patient lies on her back it favours this approximation of the uterine parietes, helps to keep the uterus *in situ*, and tends to favour the escape of the discharges that follow delivery. So I hope you clearly see the obstetric importance of the recumbent position after delivery. I have taken some pains to show what either "binder" or "binding" cannot do, and will now explain what they *can* do, and answer the questions put at the beginning of the chapter—Why do we bind? and what is the value of the obstetric binder? I will reply to the first question first. Because it is an infinite comfort to our patients, and for that reason every nurse should take pains to bind well and comfortably; they are not quite the same things, I shall point out to you.

After the strain upon the pelvic articulations and abdominal muscles during the expulsive stage of labour, and a weak feeling that arises from the removal of the foetal pressure

upon the intestines, it is a great relief for a woman to feel the support, comfort and warmth of a well-applied binder and compresses : and we may safely say that the pelvic and abdominal advantages of the obstetric binder are most "valuable."

You have the binder smoothly rolled to about a third of its length, as I told you before, the open side is to be placed upwards and the smooth side downwards when it is applied. It is to be placed next the skin, and put on in the recumbent position. Turn the bed-clothes back as far as necessary from *right to left* sidewise, *never* from top to bottom. Observe this plan as an *undeviating* rule, whatever may be the bed-side duty you may have to perform for your patient, as by this plan you prevent unnecessary exposure and chilling. Requesting your patient to draw up her knees, and keeping her shoulders flat on the bed, to raise herself up on her heels, you quickly with your left hand pass the binder under her, rolled end downwards towards the bed, and leaving it there, with both your hands adjust the loose end of the binder into position. It should more than half cover the abdomen, and be carried three or four inches beyond the median line. With respect to the pelvic position of the binder, it should be placed about an inch below the trochanter, which, as you know, projects slightly from the top of the femur, it is a sure landmark for us—and useful on that account—and pulling the binder thus far down, it embraces the whole of the pelvis, which is an important point. When the binder is adjusted—and it only takes a few seconds to do it—the patient resumes her position, and we proceed to pin on the binder. And here let me caution my younger readers not to begin pinning until the adjustment of the binder is *complete*. Never be in a hurry over things ; go quietly and thoughtfully to work, and you will save time in the end. Place a warm napkin, folded crosswise, over the pelvis and lower part of the abdomen : take the rolled end of the binder in your *right* hand, and the loose end in your *left* hand, draw the two sides together perfectly level over the hips, and then holding them together firmly in your left hand, pin them together with your right.

It is desirable that the binder should be securely fastened to start with, but I must caution you not to draw it so

tightly as to occasion discomfort to the patient. In more than one instance I have seen welts produced on the skin by pulling the binder thoughtlessly tight.

We will now place our second pin. Taking the rolled end of the binder as close to the abdomen as possible in your *right* hand, and placing your *left* palm upwards under the *loose* end of the binder, hold it firmly with your thumb and finger in position, whilst you make firm, steady, but gentle traction in a downward direction, from *left to right*; on the rolled end of the binder held in your right hand, and bringing it well over the abdomen, pass into your left hand, and holding both sides with a grip of steel between the thumb and forefinger for a few seconds, with your liberated right hand insert pin No. 2. The advantage of putting your forefinger as I have described is, amongst others, that if it comes to "running in" pins, you run them into your own finger instead of your patient, and this salutary discipline is of signal service in warning you "not to do so again!" These dexterous manœuvres with the right and left hand, respectively, that I have just described, constitute the art of obstetric binding, and, of course, can only be perfected by practice, but, unless a nurse thoroughly understands the *right method* of binding, she will never be a proficient in it; the repetition of error is *not* knowledge, and no *practice* is of any real *value* unless it is based upon *true* knowledge. We have to place our third pin in precisely the same manner as the second. The space between the pins will depend somewhat upon the size of them. With those I have described to you, from two to three and a half inches is sufficiently near. Having pinned the binder above the pubis, we must fix our compresses, which, in this instance, are to be napkins. And now I will just say a word as to the best kind of napkins for lying-in use. Let us have them large enough, and not *too* good in quality. Diaper at fivepence to sixpence a yard, half cotton, when washed is softer, warmer, more porous, and hence more absorbent than the fine satin diaper so often provided for us at more than double the price! The same remarks hold good with the infant's napkins, as we shall see in due time.

Now, as to the size for mothers. Each napkin should be about thirty-three inches long, and from fifteen to sixteen

inches wide. I find this a serviceable size for all purposes. We will assume that the napkins we are about to use are just to our mind, and at present we are going to compress with them. We have pinned our binder about three inches above the pubis, and so there is no chance of its getting out of position whilst we leave it open for a few minutes. I told you why we compress—viz., to keep the uterus *in situ*. For this end we will first apply the lateral compresses. Taking one of our napkins we fold it into halves, then longwise into fours, and then again into a square of eight thicknesses, and about nine inches long; we then fold this into a sort of flat pad of the same length as the square, nine inches long; we place it longwise on the *left* side of the uterus first, passing it well under the *two* folds of the binder, and down into the left inguinal region, and leave it there, whilst we place the other pad into the right inguinal region in precisely the same manner; we then draw the two ends of the binder together; keep your left hand flat over the pads and *under* the loose end of the binder; draw the rolled end of the binder with a firm grasp over to the right side of the abdomen, and holding the two ends together with the thumb and forefinger of your left hand, you fasten it with the third pin with your liberated right hand, as before described. You go on with your pinning until you almost come to the top of the pads, and then pause to fix the upper and last pad over the fundus.

Some nurses make it the same shape as the side pads, only place it crosswise—a good plan; but there is another that I more generally adopt, in which I alter the shape of the fundal pad. Folding a napkin into a square of eight folds, I again fold the square crosswise, and placing the long side of the compress over the fundus and the pointed end downwards, I draw the binder all over the pads, with a firm steady pull, and about two more pinnings complete our task. The binder should reach above the umbilicus, and on no account embrace the thorax—it should just clear the costal ridges.

Having completed our task within a very little, this should be the appearance of things: The binder on both sides should be perfectly smooth, without a crease, and pinned so firmly over all the pads as to be a real support and comfort

to our patient, without in the least distressing her. We now only have to deal with the loose end of the binder. We fold it over the abdomen longwise, carrying it well over the points of the pins, which it completely protects; we fasten the upper end of the fold to the upper sides of the binder with a good-sized safety pin, and now our somewhat long task is ended.

So much for the advantages of the recumbent position in obstetric binding. The disadvantages of the *lateral* position—that is, the patient lying on her *left* side—are easy to be understood. When the uterus ascends into the abdomen, it inclines rather towards the right side of it. If the patient lie on her *left* side too much or too long immediately after delivery, the uterus, being still of great size and weight, heels over, as it were, to the left side of the abdomen, and gets dragged from the axis of the brim of the pelvis, thus favouring the accumulation of blood in the cavity of the uterus, which, unable to escape, leads to the formation of a coagula; and these again put the uterine tissues on the stretch, distend the walls of the uterus, weaken its tonicity and contractile power, and in this way lead, but too frequently, to serious *post partum* hæmorrhage, often neither *suspected* nor *discovered* till the patient shows unmistakable signs of distress from loss of blood.

Lying on her left side, and almost immediately after the expulsion of the placenta, the binder used to be applied—and not so many years ago either—*over* the patient's skirts and *above* the hips, and then tied in a firm knot behind her back; and sometimes a small pillow or shawl was placed under the binder, before it was fastened up, as a sort of compress. This remarkable mode of procedure used to find much favour in the eyes of the parish doctor, and hence it was that in my training days I came to see so much of it amongst the sick and helpless poor, though by no means confined to them. Before leaving the house, the doctor used to give strict injunctions that the patient was to be left in the position he had placed her for at least *two hours* before she was put into bed. No particular attention was paid to the *state of the uterus*—that was rather *assumed* than *ascertained*—and *measures* were more relied upon than *facts*.

After binding, it is a great comfort to a patient to have her feet raised to a level with the hips by placing them on a pillow. It serves to rest her lower limbs and take off a sort of dragging feeling from the pelvis. You must next pay attention to the state of her feet, and ascertain if they are cold, knowing how much women suffer from cold feet. You can well understand that, after delivery, the discomfort of cold feet must be very great; besides which, it is distinctly injurious for a recently-delivered woman to have her feet and lower extremities cold, as it tends to keep the flow up from the uterus. In the first instance, you can wrap them up in a piece of old blanket or woollen shawl, which you make quite warm at the fire before applying it, and place it over the feet and *up to the knees*. Never imagine you can warm your patient's feet properly by piling a folded blanket or shawl *over* them. You oppress her with the weight, and more often than not her feet are not warmed by these means.

The circulation goes down after labour, and delicate women have no warmth to lose. If you find that the application of warmed flannels does not succeed, have the foot-warmer out at once. Do this at all times, summer or winter, and, as much goes to the shape of same, I may as well tell you that I recommend and use in my practice a block-tin, one of best make, and in form somewhat cylindrical. It has no angles; it is twelve and a-half inches long, six inches wide, and six inches high; it goes very gainly under the pillow upon which the patient's feet rest. Of course, when her feet are thoroughly warm, you can remove the foot-warmer, but if the weather be cold, it is as well to put it on the *left* side of the bed, and let it warm the bottom of the bed.

There is another consideration. I entirely deprecate the plan (pursued, I am aware, in numberless instances) of the nurse sleeping in the same bed with the patient. It is good for neither, and there is no ground for it on the plea of keeping the bed warm, if the plan I have stated is carried out. Having done all this, you replace the bed-clothes comfortably over the patient, remembering that "Nothing is more oppressive to a recently delivered woman than a weight of bed-clothes on her chest"; and as she has on her flannel bed-jacket, or "Nightingale," she does not

require to be overdone with them. You can now remove the pieces of carpet or drugget you put beside the bed when preparing the room for labour; also re-adjust the vallance, take away the foot-pan with the soiled napkins, &c., and remove any washstand slops there may be. If in the day-time, draw down the window blinds, make up the fire, and put the room perfectly tidy.

Your next care will be to note the state of the patient's pulse, and from time to time the uterus. First as to the pulse; after the tumult of labour the heart requires rest, and a diminution in the rate of its pulsations is a favourable omen after delivery; during labour the heart, as it were, sympathises with the uterus, its beats increasing in frequency during the "pains," and decreasing in the intervals. Their task ended, these faithful allies require and deserve rest, and hence the importance of repose to the patient. The average rate of pulsation after normal labour is sixty, but this decline need not occasion you any disquietude; whereas a *rise* above the normal rate of pulsation in health is grave, and if the rate should reach ninety or over one hundred most serious, and may be regarded as a precursory symptom of secondary hæmorrhage or severe nervous shock, and in either case the nurse must summon medical aid.

As to the uterus, there are two points to observe—the amount of the flow, and its *character*. Much depends upon this last. During pregnancy the uterus requires and contains an enormous amount of blood: after delivery there is, as you know, a great decrease in its size brought about by the contraction of its tissues, and in this way a quantity of *mixed* or capillary blood is squeezed out of the vessels from the bared placental site; and this discharge is no cause of anxiety, even though it be copious, as in the case of multipara, nor does it cause any distress to the patient, and it generally comes away in coagula, preceded by a contraction of the uterus, commonly called an "after-pain," and these flows and pains are intermittent, and the blood discharged dark in hue.

But there are times when all this is changed. The flow is bright in hue, and there is a rapid and *continuous* trickling (increasing in volume) of arterial blood from the vagina; the diapers are quickly saturated; there are "no pains."

Signs of loss of blood soon show themselves. Pallor, faintness, coldness are observed in the patient. You must at once send for the doctor. In the meantime, lower the head, and open the nightdress over the chest, and keep the face exposed to the air. Unpin the binder, remove the compresses, turn the patient on to her left side, immerse your left hand and arm in cold water, and make firm pressure upon the uterus. You will probably press out a quantity of blood or coagula, mostly arterial. If you find the uterus soft and indefinable and *not* hardening under pressure, you must douche the vulva, or rather apply a napkin, wrung out of cold water, to the vagina, and press it well in. You continue these measure until help arrives, by which time you may have restored the tonicity of the uterus. The patient will require your attention, and restoratives and stimulants must be given with *prudence*. You must not move or bind or compress the patient until medical aid has arrived; and the doctor will, when safe to do so, help you to put her straight, when she can be rebound, &c.

After the state of the pulse and the uterus has been ascertained, your next care is to consider what form of nourishment you shall give the patient, and this again has to be modified to suit the circumstances of the case, the condition, and also the wishes of the patient, and sometimes the hour of the day. If the woman has had the misfortune to have required chloroform enough to make her sick, she can of course retain nothing on her stomach but ice or cold water until the vomiting ceases. All things being favourable, however, the time-honoured milk gruel, given through a feeder, so as not to disturb the binder, is about the best thing. Some women complain of feeling *hungry* after delivery; in that case have the gruel made thick, with some thin toasted bread put to it. You can also add a small piece of fresh butter, and salt instead of sugar if preferred. I have seen recently delivered women eat a good meal off gruel prepared in this way. Others, again, care not for food, but feel faint and thirsty, and the pulse shows they require some restorative nourishment. There is nothing more serviceable in these cases, nor more quickly prepared, than the following: viz., make some fresh tea (all black, and not too strong); put a tea-cupful of milk on to warm (it need

not boil), break a newly-laid egg into a tea-cup, take out the "tread," stir white and yolk *gently* together (they are not to be beaten up together, remember!), add a table-spoonful of cold milk, then gradually pour in the hot milk, stirring the while. Pour the hot tea to about half-full into a breakfast-cup (which you have previously warmed with hot water), and sweeten it. Then, stirring the while, plunge the custard all at once into the hot tea; stir well up together. You can add a dessert-spoonful of best pale brandy the last thing. There are few patients who do not feel refreshed by this simple restorative; and as you may have to give it frequently during your time of attendance, either in tea, coffee, or cocoa, it is as well to remind you how to prepare it, as so much goes to manipulation and method. If you curdle the egg, you spoil the delicacy of the drink. It can be given in small quantities through the feeder, though I prefer myself glass feeding-tubes to feeders. They are very cheap, and you can get them any length you require; those without a mouthpiece, but smooth at both ends, are the best, as we can then easily clean them with a feeding-bottle brush. The patient can take fluids in the recumbent position very comfortably from them. Raise her head on the pillow, and put the tea, broth, gruel, &c., on to a tray—one of those cheap, but light, Japanese trays, with rims round them, are very handy—and place it over the bed-clothes at a convenient distance from the patient's mouth, as she can take her food herself. In these cases we do not want the feeder; it is apt to suggest what in our portion of nursing work we never admit, unless under severe provocation—illness!

After feeding, the next important point is repose, and, if possible, sleep, which is best encouraged by the darkened room (if it be daytime), and perfect quietude at all times.

I pointed out how desirable it was for the patient's bed to be back to the window, and you now see one of the reasons for it.

Observe from time to time (about every fifteen minutes for the first six hours after delivery) the amount of discharge coming from the uterus, but do not change the diapers more often than is quite necessary, as that tends to increase the flow. When you have to do so, remember

that the bed-clothes are to be turned back *longwise* from *right to left*, and no *further* than is needed. By this means you avoid exposure; and even if the patient was asleep you would not awaken her if you did your duty gently. As to this all-important question of slumber, let me earnestly impress upon a nurse the duty of her encouraging it in every possible way. If your patient has had some kind of nourishment after labour, she will often (especially *primipara*) sleep for two or three hours, at least, if *left undisturbed*; but if once that natural yearning for rest after travail be broken in upon by any cause, light, sound, *talking*—the slumberous feeling passes off, perhaps not to return for hours, by which time “after-pains” may set in and make rest impossible.

The state of the bladder will be your next care, and as it is impossible to give any hard and fast rule as to when relief will be required, you must consult your own judgment and the feeling of your patient; in normal cases pressure symptoms are a sufficiently safe and practical guide to go by. The profuse perspiration that so often accompanies the last stage of labour tends to check the renal secretion, and it may be many hours before the bladder requires relief, especially if you are careful to avoid *chilling* the skin, when you are putting your patient into bed after delivery. As a rule, the urine is retained longer after delivery in *primipara* than *multipara*. I shall enter more fully into this matter in another chapter, and point out to you the best way of using the catheter in obstetric nursing when it is necessary to do so.

Whatever may be the length of time after delivery, the first relief to the bladder should be given in the recumbent position and with the bed-slipper. The practice of allowing a patient to get on her hands and knees is by no means to be recommended, it leads to a risk of chilling that ought to be in all ways avoided. After warming the slipper, either with hot water or before the fire, and protecting it with a piece of soft flannel, you request the patient to draw up her knees and rest for a moment or two on her heels whilst you pass the slipper under her; and remember this is to be done *longwise* to the bed, and the clothes at once turned over again and kept so as long as necessary. There is no

need for exposure or chilling if you attend to these matters ; and when you consider how often these manipulations take place you can see the necessity for carefulness.

We have now gone through the duties required before, during, and immediately after delivery. In our next paper we begin upon those connected with convalescence, which we may say begins about twenty-four hours after delivery, when all the anxieties and cares demanded and dependent upon active labour are happily over.

CHAPTER IV. CONVALESCENCE.

THE PUERPERAL STATE—ITS LEADING PHENOMENA—ANTI-SEPTICS IN CHILD-BED NURSING—REASONS FOR—IMPORTANCE OF—CHANNELS OF INFECTION—ATMOSPHERIC AND WATER POLLUTION—PURIFYING MEASURES—VARIOUS KINDS OF DISINFECTANTS, AND THEIR SPECIAL CHARACTERISTICS—ZYMOTIC POISONS—ISOLATION OF PATIENT FROM VENTILATION—DISTILLED WATER FOR BEVERAGES DESIRABLE.

CHILD-BIRTH, commonly called the puerperal state, resembles no other condition, for, though peculiar to women, it exists only under a certain phase of their uterine life—parturition.

The two leading phenomena of the parturient diathesis are the involution of the uterus, and the establishment of lactation. The first demands from an Obstetric Nurse an initial duty that at first sight might appear wholly unnecessary, and in fact was never thought of until recent times—antiseptic precautions: and these again are peculiar, for they are directed not to protect *others* from infection, as is the case in infectious diseases, but to protect the patient from *other*, or malign influences from *without* that apparently have no existence, for every member of the family and household may be in perfect health, and there is nothing infectious or dangerous to others in a lying-in woman, nor to herself under normal and natural conditions. Why, then, should an Obstetric Nurse be called upon to take stringent measures for the disinfection of her hands and all the appliances she requires for her duties, when a Medical Nurse in charge of a case of pneumonia—which is not an infectious disease—is not under orders to take any antiseptic precautions?

To my mind, these are points of the highest interest as

regards our portion of nursing work, and every nurse should have a rational understanding of them. The keynote to these apparent inconsistencies is to be found in the remarkable changes that are taking place in the muscular tissue of the uterus, which, in fact, commence as soon as parturition ends. It is one of the most wonderful properties of the uterus that it can pass into two opposite states, that, in any other organ of the body, would be associated with pathological conditions, viz., hypertrophy or atrophy, and yet remain perfectly physiological; and it is the uterus passing from the enormous development of gestation to its normal size and condition that constitutes the peculiar peril of the puerperal state—*not in itself perilous* (remember this), but rendering a parturient woman peculiarly sensitive to infectious influences *from without*.

Through what channels is infection most likely to be conveyed in these cases? Does a lying-in woman “catch” puerperal fever as anyone else would “catch” small-pox without coming into actual contact with a person suffering from the disease? By the almost general consensus of modern medical opinion I think we may assume that infection is more often *conveyed* to the patient through the genital track than “caught” in the ordinary use of the word, and that, in the vast majority of cases, puerperal fever can be *prevented* by wise antiseptic precautions on the part of surgeons, midwives (professional), and nurses. The two first have for many years taken wise precautions in their professional duties with the most satisfactory results; but it is only within recent times that similar measures have been urged upon midwifery nurses.

Whilst taking every precaution against danger from contagion, we must not forget that a lying-in woman may suffer seriously from infectious household influences, such as defective drainage, leading to escapes of sewer gas, or impure water, even though everything has been done to guard her against *manual* contagion. No one familiar with midwifery practice amongst the upper classes of society can fail to recall instances of this danger, even amongst patients of the most illustrious rank, dangers from which the poor are almost free, for sanitary reasons that can be well understood.

Next to the question of atmospheric comes that of water pollution, which affects our patient through a different medium, and has to be dealt with differently to the former.

The water for domestic use generally comes from three sources—wells, cisterns, and mains. In the two latter the supply is either intermittent, when it has to be stored, or constant, when it can be drawn from the mains any time of the day or night. The dangers attending water drunk from surface wells has been so often dwelt upon by sanitarians that my readers are all doubtless familiar with them, and I need not repeat them. But, as bearing upon this portion of nursing work, I may as well remind you, that in using well water, two kinds of poisons are to be feared, organic and inorganic. The baneful effects of the former can be minimised by boiling, but the latter yield to no such simple remedy, for the deadly nitrites are amenable to no form of domestic treatment, and filtering is no more use than boiling here. It was a knowledge of these facts that led the municipalities of great cities to close without fear or favour *all* surface wells whatever, in spite of the fierce opposition from “vested interests” in these sources of wide-spread disease and death.

It may interest those of my readers who are either engaged, or interested in Obstetric Nursing, when I point out to them, from my own personal experience as a practitioner in midwifery in a big provincial city, the immensity of good, that has resulted to the health and mortality of our patients (and I may add their infants) since that beneficent measure of sanitation was carried through, and it is only those who were familiar with the old state of our water supply who can thoroughly appreciate the new. Throughout the length and breadth of the city, in obscurest “court” or street, is now to be found the ever-welcome tap from the main, with its constant supply of practically pure water day and night.

In the bad days of polluted well water, our patients were constantly developing obscure symptoms of disease that baffled medical skill to account for, and at times these attacks came on with a suddenness and rapid fatality that more resembled Asiatic cholera than anything else. Now all this is changed, and we seem to have entered upon a blessed era of health and good fortune, as regards our

lying-in women; it is as though some evil fiend had been banished from our midst.

In your metropolitan nursing you will be more familiar with the cistern water supply than any other, and here the impurities are rather material than organic (dirt, dust, soot, &c.), and the friendly filter will arrest the difficulty. The carbon block is the best form for the drinking water, but I strenuously advise a nurse to *boil all* the water for that purpose for her patient's use. Cisterns are not always of immaculate cleanliness, and rats and mice have, before now, been known to come to an untimely end therein, and if they impart a flavour, we cannot say they improve the purity of the water.

I greatly favour pure distilled water for our patient's table use—*not* to drink plain (it should be aerated before drinking) but for mixing with other beverages, such as milk, tea, coffee, and cocoa. No one who has tasted tea or coffee made with pure distilled water can fail to appreciate their improved delicacy and aroma over those prepared with the ordinary household water; nor is the expense considerable compared to the enhanced safety it brings to our patients, but there is sometimes a trouble to get it in quantity. I give our chemist sixpence per gallon for distilled water, but to buy it in syphon bottles is, of course, much the dearer way. Living in a large manufacturing city, where rivers of distilled water could be had, if wanted, has made me familiar with its use and value in our portion of nursing work, and I can earnestly recommend it to my nursing readers.

Whatever may be the source of the household water supply, whatever may be the form of pollution, it differs from atmospheric contamination, which is conveyed to our patients through an aërial medium, and has to be met by measures wholly unlike those we have been speaking about. For instance, we can neither boil, filter, distil, nor isolate sewer gas; it permeates the air our patients breathe, the food they eat, the very bed on which they lie, and we must seek for other weapons to combat the foe than we used for doubtful or poisonous water. We have principally two measures to rely upon—disinfectants, or germicides, as they are called now, and ventilation. With respect to disinfectants, their name is legion, but for our portion of nursing

work we will consider three, which will be quite as practically useful to us as thirty—viz., permanganate of potash, carbolic acid, and perchloride of mercury; and these three antiseptic agents have some remarkable points of difference as regards their use in Obstetric Nursing which are of great interest.

To begin with the first-named, familiar to all nurses under the form of green or red Condyl's Fluid (we only use the latter). It arrests, as you know, putrefactive changes in animal substances and on diseased surfaces, and, being *non-poisonous*, it is absolutely safe for domestic Obstetric Nursing. The characteristic colour (purple) gives it a diagnostic value that none of our other antiseptics have when used for vaginal douching, for if the returning fluid be changed to a dirty brownish hue, it indicates in a measure the amount of septic mischief that may be going on, and hence its mere physical property of *colour* gives it a great clinical significance in our portion of nursing work. Condyl's Fluid, when mixed with water and exposed to the air in shallow vessels, such as plates or saucers, and placed about the sick room, acts as an atmospheric purifier, a giver out of oxygen, somewhat resembling the action of vegetation, which, as you know, takes up the poisonous carbonic acid gas exhaled by animals, and decomposing it in the leaves of trees and plants, gives us back the life-giving oxygen instead. You can thus see the value of permanganate of potash in your town work, and in the winter when there is no foliage about. It is practically odourless, for it is only on coming into close contact with it you perceive the faint kind of smell that is peculiar to it.

Carbolic acid is a germicide, poisonous, colourless and malodorous. Though used to quell stench, it acts on the particular surfaces to which it may be applied, such as drains, sinks, soil pipes, &c. In midwifery nursing we employ it usually in two forms—powder for disinfecting all utensils, and for manual use, and for appliances and instruments; or dissolved in glycerine, the glycerine and carbolic B.P. 1 in 4 or 1 in $4\frac{1}{2}$, which can be diluted to any strength we require, and for vaginal douching I *never* use any other preparation of carbolic acid than that of a strength of 1 in 40. The carbolated vaseline belongs rather to midwifery practice than nursing, but even here I never use the carbolated vaseline of

commerce, for I cannot find out its *strength*, so prefer to carbolate my own vaseline. I shall point out to you as we go on how useful carbolated vaseline is in Obstetric Nursing, to many, I believe, not generally known. Before leaving the subject of carbolic acid as a disinfectant, &c., I must remind you that it has as much value *outside* the lying-in room as in it—I mean for the disinfection of the house sinks, soil pipes, and drains, where alone the foul sewer gas, sulphuretted hydrogen, can be met at the outset of the invasion, and in all probability conquered. For the purposes indicated the fluid preparations of carbolic acid are by far the best, being as you know, of much greater strength than the powders. Two tablespoonfuls to a pail of water should be poured down the drain at night. This is not exactly a nurse's duty, but a householder's; but it is as well for a nurse to *suggest* that it *should be done*. The practical importance of these measures to the safety of your patients I pointed out before, our best efforts may be baffled if we are being *constantly* supplied with contaminated air from household sources. We have now to say a word or two about the last mentioned of our antiseptic allies, perchloride of mercury, well known as a vermin killer, under the name of corrosive sublimate. It is a most potent germicide, and I need scarcely tell you it is a most deadly poison. It is not an aerial purifier like permanganate of potash, nor a deodoriser like carbolic acid; it is used and acts topically as a disinfectant for the hands, appliances and instruments, diluted to an extreme degree. There are two ways of using it—in loose powders that the nurse can dissolve from time to time to make her antiseptic lotions; or prepared in glycerine to a strength of which one drachm of the solution makes one pint of antiseptic lotion.

I strongly recommend the latter; firstly, because you secure a *perfect solution* of the crystals, an important point; secondly, a bottle of poison can be better guarded and kept out of harm's way than loose powders. We must bear in mind that the lying-in room is open to all comers—relations, children, servants, visitors; in cases of other sickness the sick room may be shunned, but in our portion of nursing work it is often a matter of the greatest difficulty to keep people out, and a *lost* powder would put a nurse into a very

uncomfortable state of mind. Whatever might be the form in which perchloride of mercury were introduced into the lying-in room, I should strongly deprecate its being introduced into my patients as a vaginal douche, more especially if it were frequently repeated, nor can I think it well for a nurse to be dipping her hands at least a dozen times in the day in a solution of mercury for ten or fifteen days at a stretch.

There is another source of infection to be feared for lying-in women that we cannot altogether overlook—viz., the zymotic poisons. This evil invades us from without, and defeat is sometimes our only intimation of the presence of the foe! All infectious diseases are hazardous to parturient patients, and almost all to newly-born infants. Perhaps the most so to mothers are scarlatina, erysipelas, and, last and worst, puerperal fever itself, which, until the value of antiseptic precautions was recognised, raged with devastating force in maternity hospitals at home and abroad, and in lesser degree in private practice. You may ask, what are the most likely channels of communication for the zymotic poisons? I reply, surgeons, midwives, nurses, and *visitors*, and I emphasize these last, for no one acquainted with midwifery practice amongst the middle and poorer classes of society can fail to observe how recklessly infectious diseases are spread amongst our patients by the custom of women coming from disease-stricken homes, or accompanied by young children just recovering from scarlet fever, for instance, and not fit to be about, or suffering from whooping-cough, to which I have found newly-born infants peculiarly sensitive.

Midwives, too, among the lower ranks of the calling, are culpably ignorant and negligent as to conveying infection, for (like their immortal prototype, "Sairey Gamp") they make themselves equally available for *lyings-in* and *layings-out*, with what results to their patients from these last performances I leave to the imagination of my readers in the nursing profession. Nurses also were at one time ignorant or regardless of the baneful risks of their attending sick and midwifery cases indiscriminately, coming, for instance, from an infectious disease to nurse a lady in her confinement—oftentimes, to my knowledge, with the most

deplorable results. Surgeons are more likely to spread puerperal fever than the above-mentioned, but stringent precautions on their part have greatly minimised risks to lying-in patients from that source of infection. Amongst poor women attended by medical students cadaveric poison is most to be feared, and here our new-found ally and potent germicide, perchloride of mercury, may prove of signal service, as also in hospitals; but these two last do not fall within the scope of my papers, which are devoted to home nursing only, and I merely give them a passing notice when speaking upon the subject of the zymotic poisons as they affect parturient women. Amongst other risks we must not omit to mention that a woman may lie-in with the seeds of infectious diseases in her system, such as small-pox, scarlatina, and typhoid, any of which may prove fatal to herself or infant, or both, and under any circumstances such a misfortune very seriously increases the perils of the puerperal condition. In these cases I think it would be more prudent to have a medical, rather than an obstetric nurse, as the latter might convey infection to her other patients.

I have now brought under the notice of my readers all I have to say upon the matter of antiseptics and infectious influences; but there is still one more side of the subject to discuss, in a sanitary point of view more important perhaps than all the antiseptics put together—ventilation, and in private practice often most difficult to carry out as regards the lying-in room. It is very easy to give *paper* directions for the proper ventilation of your patient's room, but the reverse of easy for an Obstetric Nurse to carry them out, sometimes from structural defects, but more often from opposition on the part of patients or their friends. There is a great deal of sanitation taught nowadays, and more *talked*, but not half enough *acted upon* in private homes, and in some cases the opening of a window would almost lead to dismissal for a nurse. It is often difficult to get people to understand that fresh air wisely introduced into a room does *not* mean chill to the patient, for that is far oftener the result of careless nursing than open windows.

In ventilating your patient's room there are two points to consider: how to get the stale air out, and the fresh air in. There are two exits for the former—the fire-grate (which in

our climate should have a fire in it ten months out of the twelve) and the *top* of the window (which should be kept a few inches open all day, and, weather permitting, all night). The entrances for fresh air are the *bottom* of the window, which should be opened at least once in the day, and the door, which is of course being constantly opened. A great deal goes to the relative positions of window, fire-grate, and door, as regards our ventilating arrangements, as to whether or not we can get a direct current of air through the bedroom, which should be done once a day—say at noon—and can only be effectually carried out when the door and the window are in a line with each other. Sometimes the door is opposite the fire-place, which may give us a draught of air through the room, but nothing at all so good as the former arrangement; and, worst of all, we sometimes have the door at one end of the room, and the window at the opposite side of the room, but quite out of line with the door, as also may be the fire-place, and thus our ventilating plans are interfered with, but we must still open the door *and* window both at once some time during the day. One of the advantages of getting a good supply of fresh air into your patient's room is its important influence in inducing sleep, for I am sure that one cause of insomnia is foul air, and at night the top of the window should be left open, if the position of the bedstead favours it. Fresh air has also an effect on appetite, and when we consider the importance of food and sleep in aiding convalescence, we should do all we possibly can to promote the thorough ventilation of the bedroom.

Nor must we overlook *outside* measures. You may often, for instance, be able to keep the landing, if you cannot the bedroom, window open, and that, too, at night, and by this means get fresh air in at the door every time it is opened. You can well understand that ventilating difficulties are far more present in town than country houses. In the former it is often hard to get fresh air enough for our patients; in the latter we may have too much, and you have to protect your patient from "draughts." In town houses one roof covers all the drainage of the house; perhaps none of the drains are trapped; so at night, when doors and windows are closed, you can realise the "situation." If the staircase

windows had ventilating panes in them—*i.e.*, glass put in slant fashion like venetian blinds—and the fanlight over the front door were fixed on a swivel and kept open all night, the house might be fairly ventilated. It is inconceivable that people should shut out the night air, the purest of the whole twenty-four for town dwellers.

I have dwelt fully upon the hygienic part of our nursing work from its extreme importance. Other nurses have to face disease at once; *we* have to keep it at bay. A deceased statesman once said, "Precautions never appear so unnecessary as when they are perfectly successful." A great evil is averted, and the cynic cries, "There never was an evil to avert." You must not forget that "getting over" a confinement and "getting well" are two different things, and that good nursing conduces to the latter consummation more than anything else, and without sanitary measures there can be no *good* nursing.

CHAPTER V.

DUTIES DURING CONVALESCENCE.

CONVALESCENCE—DIVISION INTO THREE PERIODS—CHARACTERISTICS OF EACH—"AFTER-PAINS"—CAUSE OF HEATMENT—OF BEDSIDE DUTIES—BEVERAGES—PREPARATION OF SIMPLE FOODS—MEALS TO BE SERVED REGULARLY—NIGHT ARRANGEMENTS FOR THE ROOM AND THE LADY—FIRST WASHING AND CHANGING AFTER DELIVERY—HOW TO DO THEM—VAGINAL DOUCHING—APERIENTS—ENEMAS—GENERAL MANAGEMENT OF THE PATIENT.

WE will divide convalescence into three periods, describe the leading characteristics of each, and point out the nursing duties special to them: 1st, From the completion of delivery to the commencement of lactation; 2nd, the establishment of lactation; 3rd, the lochial period.

The first twenty-four hours of the first period are the most critical of all, as there is a possibility—happily most rare—that a woman may die of hæmorrhage or nervous shock within that time. I draw your attention to the former in order to impress upon you the value of those nursing duties enjoined that tend to lessen the risks from, if they cannot prevent, puerperal hæmorrhage. We have so recently dwelt upon the immediate duties after delivery, that we cannot do better than resume them from where we left our patient fed and put to rest after her delivery; and the first trouble we have to encounter is the distress she suffers from the *post-partum* contractions of the uterus, commonly called "after pains," and the popular consolation usually offered to a patient is "that they are all for her good"—like sermons. You may ask, Why these "pains"? One cause is the gradual contraction of the muscular tissues of the uterus, leading to a diminution in the size of that organ, that takes place after delivery; these contractions also expel any

coagula that may have formed in the cavity of the uterus, which affords a temporary relief from pain.

I have pointed out the importance of the recumbent position after delivery, and why we bind and compress, and you now see the practical value of them. Again, the lining membrane of the cavity of the uterus about the region of the bared placental site may be very sensitive to pressure, and give rise to that feeling of excessive tenderness of which some women complain after the "pain" has died away. We must also remember that the gravid uterus is a colossal muscle, and after the expulsive efforts of parturition, it may ache from fatigue, as any other muscle of the body would after violent exertion. This may be one reason why some women complain of "after pains" almost immediately after delivery, and the extreme tenderness of the uterus on *pressure*, though they feel the comfort of the *support* the binder affords.

With respect to the character of these painful *post-partum* contractions, they are intermittent, recurring at uncertain intervals, and varying in duration and strength, and they are generally followed by some sort of discharge from the uterus. They continue to distress the patient on and off for two or three days after delivery. When they are passing away, the intervals become very much longer than at first, the patient having only three or four in a day, for instance, but the "pain" itself will be as strong as at the beginning, and the last may be almost the worst of all.

The nursing duties required for this peculiar distress, are, first, the comfort and support that good binding and compressing afford. The *recumbent position*, which favours the escape of coagula after the contraction has passed off, and thus prevents their accumulating in the uterus, which, of course, add to the evil, and keeps up loss. *Perfect repose* is the most important point of all; every movement of the body—especially any sudden movement—tends to increase the slight internal hæmorrhage that goes on for hours after delivery, hence the more movement, the more the flow is increased, the more are coagula formed, and the worse the "after pains," and the greater the patient's distress.

A mischievous idea used to prevail at one time, and is far from extinct yet, that it is good (?) for a woman to lose freely after delivery, and that the flow should be rather

encouraged than repressed ; I earnestly impress upon you the fallacy of this notion, and that good nursing recognises no such practices ; it led to another evil, viz., in order to make up for the loss a woman was to be sustained by stimulating food and drinks, both injurious to her at the time at which they were administered, and thus other troubles followed in their wake that might have been *prevented*, but had to be met by measures rather worse than the initial error itself.

Fluid nourishment taken in the recumbent position through a feeding tube is the safest way to feed your patient for the first twenty-four hours after her delivery, however good her "time" may have been. The food should be given warm, but not hot. One of the distressing effects of "after-pains" is the loss of sleep they occasion ; hence nourishment has to be given frequently. Milk, gruel, eggs beaten up in tea, chicken broth, into which you can stir a tablespoonful of cream, cold custard if delicately made, can all be taken through a feeding tube, just raising the patient's head, but not otherwise disturbing her ; they are all bland and nourishing foods, and in my judgment, wiser to be given than solids for the first few days, though of course we can dispense with the feeding-tube by that time. There is no harm in continuing it, especially if you have a proper bed-table to place across the bed, on which to rest basins or cups and saucers, the patients can feed themselves. Many of mine like the *lazy* way of taking their drink through a tube, and have the *ingratitude* to blame their adviser for putting them up to it !

Before leaving the subject of "after-pains," I must call your attention to a rarer form of them, which requires totally different measures to those I have just described. It consists of a sort of spastic condition of the uterus. The attack comes on one or two hours after delivery ; the "pains" are so frequent as to be almost persistent. There is generally an imprisoned clot, gripped, as it were, by the uterus, that the contractions fail to expel ; the uterus is hard to the touch, and extremely tender. No pressure can be borne, binder has to be unfastened, compresses removed, the patient cannot bear to be on her back, she lies on her side and draws up her knees. The best relief is afforded by

the application of *continuous heat to the uterus*, hot flannels, or—better still—bran stupes placed over the uterus is a very comforting remedy. Hot milk, and if there is much distress from pain, a little pale brandy added, is the best form of nourishment. See that the feet and lower extremities are warm; if the latter are cold, have a foot-warmer to them. These measures tend to relax the uterus, a clot or two escapes, and relief is afforded; these attacks last for many hours after delivery and are worse at night. Young, delicate women, who have borne many children, seem more prone to them than any other patients; and it generally happens that they have suffered from cramps during pregnancy.

This form of “after-pain” is not serious, but very distressing to the woman; and as the trouble comes on at a time when your patient is left in your charge, it seemed to me right to direct you how to act in these emergencies until you receive your instructions from the doctor; he would most likely find your patient almost free from pain in the morning and approve of what you had done.

The nursing duty that demands attention after those detailed in my last chapter is the washing and changing of the patient. Of course the binder will have to be re-adjusted and the draw-sheets removed, at least once in twelve hours after delivery, as that does not much disturb her; but in my judgment the patient’s night-dress should not be changed until twenty-four hours after delivery, as perfect repose is so necessary during that period, for reasons I have recently pointed out to you. In making our calculations we must remember that they all date from the hour at which the birth took place—the beginning of an “obstetric” day, if I may so call it, both for mothers and infants. Assuming birth took place at 2 a.m. or 10 a.m. on a Monday, the earliest we could prudently change our patient would be 9 a.m. or 10 a.m. the following Tuesday, or if birth took place at 10 p.m. Tuesday, it would be the Thursday morning following. You cannot always make it a level twenty-four hours, but you can arrange that it shall never be less. And here I must digress a little, to impress upon you that the same fact—time of delivery—must guide you in feeding your patient, and sometimes influence the choice of food.

For instance a lady is confined at 7 a.m., and it is most likely the first meal she would wish for is her breakfast—a cup of tea with milk, and some very thin dry toast soaked in it, or bread and butter to eat dry. This would be followed at 11 a.m. by a basin of milk gruel; and at 1 or 2 p.m. —at the dinner hour—chicken broth, or something of this sort; and then we get into the every-day order of meals, which, as you know, has a good deal to do with inducing appetite. A patient will be more likely to eat at times when she is accustomed to do so, than at unusual hours. And we must recollect we do not *begin* with illness (as a rule), and therefore never admit it until we are obliged.

Now as to the arrangements for washing and changing our patient, and the amount of both to be allowed for the first time after delivery. Get everything ready before you begin, and fasten the bedroom door from the inside, or you may have it suddenly opened upon you, with a good chance of chilling your patient to start with. We do not get hospital discipline in the domestic circle. Bring the washing basin—not too full of water, or you may slop it about—close to the bed. Place it on a chair or the bed-table, if you have one, with the soap-dish, sponge, flannel, and powder-box; one Turkish towel, and one soft towel, both *perfectly dry* and *warm*. The water for washing should be quite warm, and I generally recommend that a small quantity of Californian borax (a teaspoonful to a good-sized washing basin of water) should be put into the water to *soften* and in a measure purify it. We have just recently discussed *serious* water troubles. Now we have to deal with *irritating* ones, for the mineral impurities that so often render water “hard” are enough to “curdle the temper” of the best of soap, and ruffle the composure of the most serene of nurses; and here comes in the question of soap: what sort? The choice must perhaps be left to the lady herself. Going on with what we begin with, we use glycerine and borax transparent soap, made in circular cakes, pleasantly perfumed. This soap makes a nice lather, and soften hands and skin, and is good for *both* our patients. One thing we may be sure of—*softening* the water to begin with more than half settles the soap question; hence I have brought the matter under your notice.

Remove the bed-jacket, and put it aside so as not to get it wet: place the Turkish towel over the top sheet, and across the patient's chest; wash her face first with the sponge, which you must squeeze pretty dry, so as not to slop any water about the pillows and sheets; remember to do this with the flannel also. You will not require any soap for the face if there is borax in the water (which, by the way, keeps the sponge clean). Do not leave the sponge in the water; take it out each time you have done with it. Wipe the face dry with a soft towel; loosen the night-dress at the neck; raise the head, and wash the throat with the flannel lightly soaped, and rinse off with the sponge, and wipe dry. Gently raising the patient up into a sitting posture, slip off the sleeve of the night-dress from the *left* arm, and if there be a vest that also; wash the arm and arm-pit with soap and flannel; wipe very dry, and powder; then wash the left breast in the same manner. Have ready the clean night-dress, which should be quite warm; replace the vest, and slip the *left* sleeve of the night-dress over the *left* arm, and keep it out of the way whilst you slip off the soiled night-dress from the *right* shoulder; loose the vest sleeve, and repeat on the *right* side all you have just done on the left; then put the clean night-dress over the patient's head, slip the right sleeve on to the right arm, and draw the night-dress down to the waist, and the soiled one just below it. Put the bed-jacket on again. Remove the binder and napkins, draw the soiled night-dress down over the hips and take it away.

Now wash the vulva, but at this time I do not advise vaginal douching with the water you have just used. I neither use flannels or sponges for this purpose, but a soft little mop that answers a great deal better than either. Wipe the parts perfectly dry with a Turkish towel, and place a clean draw-sheet under the patient. Do all these manipulations quickly, exposing your patient as little as possible. It is to avoid chill to the skin I directed you to wash your patient "bit by bit" as it were, covering over the parts as soon as they were washed and dried. Put fresh napkins to the vulva; apply a clean binder. You may remove the compresses; they are not often required so long after delivery, but if the patient wishes them continued go on with them; they cannot do any harm. Arrange the bed-clothes,

shake up and smooth the pillows. This is about all it is safe to do in the washing and changing of the patient at this period. She may feel a little fatigued even after this amount of exertion, so have some light refreshment handy, such as milk and water, with a sponge cake, to carry on till lunch time.

Take away all the things you have had for use, and make the room tidy. Open the window at the bottom, and the door at the same time, for five or ten minutes, if the day is fine; you can cover the patient over with a light woollen shawl whilst you do this. The air of the room will be renovated, and most likely your patient will get some sleep. At all events, keep everything quiet in order to induce it, and darken the room. Too much light will often prevent sleep as much as noise.

Sleep is Nature's great restorer in sickness and in health; the lassitude that follows cessation from the "after pains" will tend to induce *natural* slumber if it be encouraged by *perfect quietude*; and the nurse must do all in her power to ensure it for her patient, and impress upon the members of the household the necessity for it, and in all probability there will be no need for narcotics to procure sleep. In my judgment, they are better dispensed with for lying-in patients; and if they can be *kept quiet* they rarely require them; and I need scarcely tell you a nurse should *never* administer them except under medical direction.

There is another distress our patients suffer from for some days after delivery, and that is constant thirst, the result doubtless of the inevitable hæmorrhage that attends parturition, and what sort of drink to give them becomes a nursing point of much importance. I find three beverages, each suited to the three periods into which I have divided convalescence, about the best—*toast water* for the first, *barley water* for the second, aerated drinks further on when needed. The first I recommend to be made, *not* with boiling water, but with water that has been *boiled* and cooled down. A chunk of stale bread (about the size of a small tea-cup for a pint of water) should be put into a hot oven and dried all over to a *dark* brown, but not burnt; macerate this in the water for an hour or two before using, and put a piece of clean paper over the jug if there be no cover to it. A good deal goes

to this simple concoction—it is refreshing, slightly nutritive, and soothing to the stomach from the gluten dissolved in it from the bread. Make it fresh. You can get pieces of bread dried for you during the day, and keep them in your room ready for use. Barley water is most serviceable at the commencement of lactation; it is a bland nutritive beverage, and I believe helps to make milk; it also has a soothing influence on the kidneys. I have it prepared in this wise: put half a tea-cupful of the best pearl barley into a saucepan with a quart of *cold* water; let it come to a boil, strain off the barley; put it back into the saucepan with a pint and a-half of *hot* water; let it boil for an hour, stirring up frequently; strain off into a lip-basin, and then pour it into a clean jug. Let it stand till cold. Carefully pour off the *top* clear part into another jug; sweeten slightly with caster sugar, and add a tea-spoonful of *fresh* lemon juice. I never use pulp or peel, and of course take out the pips. The sediment remaining at the *bottom* of the jug into which you first poured the barley water can be boiled up for about half an hour with a pint of hot water, and, after standing, be strained off like the first decoction. Barley water as a *beverage* should be *thin* and mucilaginous; it is a most refreshing, wholesome drink, and there are few patients who do not appreciate it. You should have it prepared one day for the next; it cannot be well made hastily. Sometimes we give barley water mixed with milk; in that case you can make it thicker and stir it altogether when you *first* pour it off, and thin down with *cold* milk; this is as much food as drink. In my experience I found no more valuable beverages for the period I have indicated than these two preparations of pearl barley.

My readers may ask—Can we not get all this from a six-penny cookery book? I reply, Possibly! But that is not the point I aim at. A string of recipes is of no use to a nurse *per se*. It is their adaptability to varying circumstances that gives its whole and sole value to *nursing* cookery, and we do not get that in a cookery book. If a nurse (obstetric) is only a creature of routine she is only half a nurse. I humbly submit that the preparations I have brought under her notice are not quite in the common order of things; hence my motive in introducing them here.

With respect to aerated drinks, they are more useful in a latter period of convalescence (lochial), when they sometimes have a little feverish thirst. Here I prefer the aerated *distilled* waters as our purest medium for any flavouring we like to add, such as fresh fruit juices or syrups. My readers may not all be aware that the aerated waters of commerce are charged only with carbonic acid gas, and that the soda, potash, &c., exist, as a rule, in the imagination of the consumer. We can add them when required, and we find the following a handy method :—Make a strong solution, say of bicarbonate of soda (two drachms to three ounces of distilled water, five grains to the fluid drachm); stir in a tea-spoonful with the milk *before* you pour in the aerated water, and then you know that you have given your patient *soda* and milk, and what quantity. (You cannot be weighing five-grain doses of carbonate of soda five or six times a day!) You may think it unnecessary to *weigh* such a simple drug, but alkalies should not be given recklessly to sick or well; and when we have to administer them medicinally we ought to know what we are about. We do not often require soda or potash, the aerated water is all that is ordered, but with milk the addition of an alkali is often desirable.

Repose after her first washing and changing after delivery is essential. The next care will be her dinner, which should be served not later than one p.m., and should consist of beef tea or chicken broth, thickened with arrowroot, which I consider preferable to toast, as the food can be taken from the feeder or feeding-tube, and in the recumbent position, slightly raising the head beforehand. And this position must be maintained, so long as evidences of internal hæmorrhage, such as coagula or sanguineous discharge from the vagina, are present. Fluids should not be given too hot at this time; and any sudden or jerking movements avoided on the part of the patient, and she must be gently assisted in moving.

With respect to meat food given in a fluid form, such as broths, &c., let me remind you once for all, that they should always be prepared *one* day for the *next*, for by no other plan can they be effectually cleared from the fat, which is bad for, and but too often renders them distateful to, sensi-

tive delicate women—the very patients who most require such form of nourishment. I also advise that the broth should be made fresh, the quality of *freshness* being in my judgment a most important point.

As the household *cuisine* is not always irreproachable, a nurse should have a knowledge of the preparation of these important foods, I like it made as follows. We will take beef tea first. Take a pound of lean beef cut from the shoulder—not the leg, as is usual; we want fibrine, *not* gelatine; there is no nourishment in that, though useful to us sometimes, as we shall see. This fine, lean meat is *not* to be cut up into the squares so dear to the heart of our every-day cook, but placed on a chopping-board, and with a sharp-pointed knife (a game carver, for instance) scarified on both sides and in all directions, so as to thoroughly break up the fibre. If there be any pieces of fat amongst the lean, remove them before you scarify. Sprinkle just a little salt all over the meat, which you have now reduced almost to a pulp. Put it into a saucepan, and pour over it *one pint* of cold water—distilled if you have it; if not, water that has been boiled and got cold. Let it soak for at least an hour—an hour and a-half would scarcely be too much. Then put it on the fire to boil, a fine flocculent scum (really meat in finest state of division) rises to the top, which our friend the cook invariably takes off (if she has the chance) instead of stirring it in. Liebig advises that the meat should only boil for fifteen or twenty minutes after first coming to a boil. I let it simmer for some hours in the meat juices. It should then be strained off *at once* through a coarse *wire* strainer into a *lip* basin, and left till you want it the next day.

What do we find then? A clear amber-coloured fluid *slightly* set, with perhaps a few globules of fat on the top, which you carefully remove; at the bottom of the basin a fine brown sediment, which the cook strains off (if we let her) when the beef tea is served! Need I tell you that this precious deposit is the fibrine of the meat in a state of minutest division—the solid portion of our beef tea, which we intend to go down our patient's throat, and *not* the kitchen sink? It is to "capture" these particles that I told you to add a little arrowroot to the beef tea, or if not that

to thin toasted bread. So long as your patient requires beef tea, have it prepared in this manner.

Mutton broth is made quite differently, though even here we clash with the cook (the natural enemy of the Obstetric Nurse). I like it made thus, the addition of veal giving it an improved and delicate flavour—viz., one pound of the scrag of mutton, one of scrag of veal, put into a quart of cold water. When it comes to a boil let it simmer for three hours, and then pour off at once. And here let me say a word as to the fallacy of the “boiling down” system in making broth for the sick. It may be all very well for stock. What do we aim at when we make broth for them? To soak out and cook the juices of the meat (principally albumen). Now we cannot get *more* albumen out of a given quantity of meat than there is in it, however long we may “boil down.” Put as much water as you want broth from the beginning, and make your broth *strong*, the routine proportion of one pound of meat to one pint of water is about the right strength. It is usual to add thickenings to mutton broth, which are very good; but for sick cooking I do not advise the barley or oatmeal to be put *with* the meat—they are apt to absorb the fat, and make the broth taste greasy, which is a grave fault when it is re-warmed.

Chicken broth is the most delicate of broths, and I greatly recommend it during early convalescence. You want a good-sized fowl for making broth, drawn but not trussed, as we lose a good deal of the meat under the poulterer’s hands. I have the breast and white meat of the wings cut off; they will be nice pounded, and be a change for our patient, so we will cook them separately; the body and legs will do for stewing down. Have all fat removed from the fowl inside and out. Of course we do not use the liver or gizzard, and it is better to take the lungs out of the thorax; they discolour the broth, and are no good to us. The fowl must be well washed and put into a saucepan with a quart of cold water, and, after coming to a boil, simmer gently for two or three hours until the broth is fully and pleasantly flavoured by the fowl. I do not advise any spice to be put to it, but a quarter of an ounce of sweet almonds beaten up with some of the broth, and strained off, gives a delicate flavour to it, especially if we add cream to the broth when we serve it:

but this is merely a suggestion, not important at all. Broths should be thickened if required *after* they are made, and when they are served, for the reason I stated. Arrowroot is best for chicken broth, but the patent prepared *cooked* oatmeal is nice for mutton broth, and, as it is as quickly prepared as the arrowroot, it comes in serviceable.

The breast and white meat of the fowl can be boiled separately. When cooked take off the skin, remove the meat from the bones, and pound in a stone mortar into a paste with a little of the liquor the breast, &c., was boiled in (you can add the almonds to the liquor to start with, if desired, they impart a nice flavour); a mere grate of nutmeg or lemon peel may be added, and, of course, a little salt. Boil gently for a few minutes to any consistency you like, using the liquor for that purpose; by this means you can give it either from the feeder, or if thick with a spoon.

I hope I have made clear to you the kind of fluid meat nourishment best suited to our patients during early convalescence, upon which we have now entered. The three cardinal points with respect to them are freshness, strength, and entire freedom from fat. My readers must pardon the digression, but in my judgment an obstetric nurse should understand the preparations of these simple concoctions, for the less we have to do with the "substitutes" of commerce the better. Useful *when* we have nothing else at hand, they should never be relied upon to take the place of freshly-prepared broths, &c.

After the midday meal sleep should be encouraged, for by that time the patient has been awake some hours. You may think this may prevent sleep at night. Not at this early stage of convalescence, for sleep begets sleep, and helps to *tranquillise* the brain—a point of *first* importance for parturient patients.

At four p.m. the afternoon tea comes in, and there are few of our patients who do not welcome it. Bread and butter, or a sponge cake, with this meal is better than the hot buttered toast—of which I have no opinion—that is often given at tea time. If the patient wishes it, or if she appears faint, you can beat up a new-laid egg in her tea, but I do not advise it being boiled.

The evening duty follows after this. Wash the hands and face, change the draw sheet, adjust the binder, shake up the pillows, arrange the bed-clothes, and in fact put things comfortable for the night. This should be done not *later* than nine p.m. After this a basin of milk gruel for supper. With respect to this last form of nourishment, a great deal goes to how it is made to get some of our patients to take to it, and as oatmeal forms a very important part of their dietary we will say a few words about it.

Gruel can be made and strained off from groats or coarse Scotch oatmeal; but in either case it should be thoroughly cooked. It is the half raw condition in which it is so often served renders it distasteful to women. The best thing to make the gruel or porridge in is a clean *tinned* iron saucepan (eschew enamelled ones), which should be kept exclusively for that purpose. If you use coarse Scotch oatmeal, put a pint and a-half of water into the saucepan. Let it come to a sharp boil. Put a pinch of salt in. Take a half a teacupful of meal; gently drop it into the boiling water, stirring the while. Draw the saucepan off the fire on to the hob, and keep it gently boiling for an hour, stirring frequently. If it thickens more than necessary for straining, add more water. When done, pour through a *gruel* strainer into a basin. Then put as much as you require back into the saucepan with some milk and warm them together. Some women like thin dry toast in their gruel, others not.

After supper comes preparation for the night. Have up in your room all you may be likely to require—fuel, water, and whatever kind of light you may have for your use, such as candles, lamps, &c., or if gas, that you have matches at hand to re-light it if necessary; milk, tea and sugar, some biscuits, a reserve of gruel to re-heat, &c. With respect to a light for the lady's room, we all know that gas is the worst, but it may be the only means of lighting that you have. Supposing there is gas in both your rooms, see that you have a portable light as well (a candle and candlestick), so that if you have to fetch up anything in the night or leave your room it will be ready for you. I have heard of nurses, from negligence in this matter, stumbling about the house in the dark or very early dawn, and thus conveying

an impression of "burglars" about, to the terror of some one or more of the household—generally the cook.

I think the best light for the lady's room is one of Price's patent night lights, burned in a glass cup. They are very reliable, and give quite sufficient light, and there is no smell with them. When you place the light, put it into such a position as not to be in the lady's eyes. We do not want to keep her awake over a night light! When you make up the bedroom fire for the night, screen that also from her eyes; it may burn up brightly, and flickering on her face awaken her. A good or a bad night depends more often upon trifles than you may think for; and what nursing point is of more value than how to encourage sleep? At this stage of convalescence there is not often pain, and the milk troubles have not yet begun (as a rule).

Having put up the night-light and made up the fire before leaving the lady's room, place a small table close to the bed, on the right side, and well in *front* of her, so that she can comfortably reach with her right hand whatever is placed upon it. Some nurses are apt to forget this, and, putting the table too near the bed's head, the patient has to rise up, or turn her hand *backwards*, to reach things; hence they often get upset or knocked off the table. Having properly positioned the table, place upon it a cup of barley or toast water and a biscuit or two (handy if required in the night)—I prefer cups to tumblers, as they are more convenient to hold from having handles),—a handbell or a small gong, with which to summon you when required. I mentioned that the nurse should not sleep with the patient, nor in the same room, but in one closely adjoining. Few patients are able to sleep the night through at this early stage of convalescence, and at 2 or 3 a.m. they may be glad of a cup of warm milk gruel. Let me here impress upon you that parturient women should never be kept long without some sort of nourishment, though you are on no account to awaken her, day or night, to administer it, for sleep is as precious as food. There are great, though unseen changes going on, and the system must be supported, *not* by taking too much food at any one time, but at frequent intervals, and in moderate quantities, which will allay

that feeling of faintness, which is injurious to the patient, and too often, alas! relieved (?) by stimulants instead of nourishment. It is also wise to vary the meals as far as possible. Monotony palls upon the sick palate as much as upon the well, and our dietetic resources are not so limited as in ordinary sickness.

Many women like an early cup of tea, say at 7 or 8 o'clock a.m. This can only be regarded as *refreshment*, and given in deference to the wishes of the patient, and preliminary to the leading meal of the day—breakfast. This should consist of a cup of cocoa made with milk, a *lightly* poached egg, bread and butter and dry toast, or rather toast buttered dry; some marmalade or preserve can also be given if wished. With respect to cocoa, which is such a useful article of diet for those of our patients with whom it agrees, I prefer it in *blocks*. The Navy cocoa is about the best of that form of preparation, or a decoction made *fresh* every day from nibs, and if properly made, in my humble judgment preferable to the former, when we make it an everyday article of diet. It must be made one or at most two days before it is wanted; the bean should be of the *best* quality. Take two ounces of the nibs, and bruise them in a stone mortar; put them in a new tinned iron or copper saucepan (which should be kept for the purpose, as the cocoa stains it), and pour over a full quart of cold water; the nibs should boil for five or six hours, and then be strained off into a clean jug and covered over till wanted. There is sometimes, if the bean is really good, a little fat on the surface, which must be removed before re-warming. To women who object to *thick* drinks this decoction is the most delicate and palatable form of cocoa; it can be taken with milk or cream, but it must be made with water, and it should be of a pale pink hue when done. I have known patients, who could take neither cocoa or chocolate as drink, like and take to this decoction, much to their benefit.

After breakfast you must make preparations not only for the washing and changing of the patient, but the bed linen also, and be ready to begin at, say, 10 a.m. latest. Assuming that birth took place some time on a Monday, it will be the Thursday following before you can prudently venture on

these increased duties, and then only if the patient's strength permit it. Have the clean sheets, pillow-cases, &c., spread out before a good fire at least an hour before you want them, so as to have them thoroughly dry and warm.

I have directed you how to wash and change the patient, I need not repeat the instructions, as they hold good so long as the lady is unable to rise from the bed; but on this occasion you will most likely be ordered to give your patient an antiseptic vaginal douche, and I must now tell you how to do this. You will require a bed bath, as it is called, for that purpose, made of similar material to other baths, about eighteen inches long, rounded at both ends, and narrowed in the middle, something fiddle fashion. It is usual to put a flannel covering over the bath before you use it, and sometimes they have pads at the ends and are made "smart," but I do not recommend anything of a "fixed" arrangement, but think a piece of soft flannel, put over loose, and removed and washed every time the bath is used, preferable in a sanitary sense to more artistic (?) contrivances. You will require three pints of warm water for the bath, into which you will pour the antiseptic you are directed to use. We will assume it is a Condly course, and in that case we will go on with Condly all through. Now what amount of Condly are you going to put to that amount of water? The divergence of medical direction in this respect occasions much confusion to an Obstetric Nurse (and in other things besides Condly), but in the absence of any orders to the contrary from the doctor, put a fluid drachm (tea-spoonful) of the fluid to every pint of water for daily douching.

I strongly advise every nurse to use an enamelled measuring spoon for her disinfectants, for by no other plan can you be *sure* of your proportions; a *tea-spoonful* is no direction at all. Obstetric Nurses have been reproached for the careless way in which they use antiseptics, but how about the *careless* directions they so often receive from the lips of their medical chief? The moral of my homily is—use a graduated measuring spoon; they are very cheap.

You will, of course, require a syringe for the vaginal douche—one of Higginson's or any other of equal merit. Put the vaginal tip firmly on to the nozzle end of the syringe, place the feeding tube at the lower end of the bed-

bath and keep it *well under* the water; do not forget this, or you will draw air into your syringe. Before placing the bath in the bed *charge* the syringe, so that the tube is ready for insertion. Before douching you will have washed and changed the patient, but not have removed the soiled dress from the waist. Take off the binder and the napkin, keep the soiled night-dress above the hips, and now place the bed-bath, and so by turning the bed-clothes back *longwise*, and as little as possible. Requesting the patient to draw up her knees and raise herself up, you quickly put the bath into position well under her. Having previously dipped both your hands up to the wrists in the Condy's solution in the bath, pass the tube gently into the vagina, and having the syringe charged as I told you, *gently* work the ball of the syringe with your *right* hand, keeping the vaginal tube in position with your *left*; you are *not* to remove your right hand from the ball during the time you are douching. Three or four injections are sufficient; these done you remove the vaginal end of the syringe, and take away the bath. Then press firmly with your left hand on the uterus and lower part of the abdomen, and let the draw-sheet remain until the sheets are changed before taking it away; thoroughly dry the vulva and adjacent parts, draw down the soiled night-dress over the hips and as far as the knees, and there leave it, draw-sheet and all, and apply yourself to making the bed and putting on the clean bed-linen.

To make the bed without removing the patient from it, you must have some one to assist you, and proceed in this wise, viz. :—

Remove the quilt, and eider-down coverlet if there be one, also *one* of the top blankets if there are two, and place them away from the bed, but handy to replace; remove the bolster, and put a pillow under the patient's head instead. Go round to the *left* side of the bed, turn the soiled top-sheet and blanket *longwise over* the patient; roll back the soiled bottom sheet, longwise from top to bottom *towards* the patient; take the clean sheet *warm* from the fire, get your assistant to help you fold it in half longwise, place it in the middle of the bed from top to bottom, edges *outwards*, tucking the outer one well under the *left* side of the bed, and the bottom of the sheet under the foot of the bed, *left*

side ; fold the inner half of the clean bottom sheet smoothly and as small as you can from top to the bottom of the bed, and pass it *under* the *soiled* bottom sheet.

Take a clean draw-sheet, and place it over the clean bottom sheet close to the edge of the *left* side of the bed ; place a pillow at the head, turn back the top sheet and blanket, and, with help, place the lady on a clean draw-sheet. Go round to the *right* side of the bed ; turn back the top sheet and blanket over the patient as you did at first, remove the draw-sheet and the rest of the soiled lower sheet and the waterproof sheeting from under the lower blanket ; place the rolled end of the *clean* lower sheet all over the right side of the bed, tucking it in side and bottom. Remove the lady on to the clean draw-sheet, back to the right side of the bed, remove the night-dress, and cover the bed-clothes over her, replace the bolster, put on clean pillow-cases and arrange the pillows ; bind the patient, and change the napkins. Now change the soiled top-sheet, and put on the clean one, first on one side of the bed and then the other, turning the top clothes over the patient *longwise*, as you did when the clean lower sheet was changed ; tuck the top one well under the sides and bottom of the bed. Then put on the other top blanket, or eider-down coverlet, and the counterpane. All these manipulations must be done quickly, quietly and in order, giving the least possible disturbance to the patient, and carefully avoiding all risk of chilling her. I commend them to the earnest perusal of my young obstetric nursing readers, for there are few things in which nurses are more apt to "backslide" than in their bed-making.

Have all the soiled bed and body linen removed from the room, and arrangements should be made to have them *at once* conveyed to the laundry, and this should be done every morning, and all child-bed linen should be washed *apart* from all other clothes, and the addition of some Condyl's *powder* in the water they are *first* washed in is advisable, though not always necessary in normal cases. I told you to remove the waterproof sheeting, which, absolutely necessary (for the protection of the bedding) during delivery and for some three or four days afterwards, when the blood discharged from the uterus is more or less copious, ceases to be required when it diminishes in quantity, and the lochia begins

to assume its usual characteristics, of which we shall say more in a future chapter. With respect to waterproof sheeting for our patients, in my judgment "the less we have of it, and the sooner we dispense with it the better"; but in private practice you may find that the lady may prefer to have it continued, or you may have medical directions to that effect.

You may ask what are my objections to a *continuance* of the waterproof sheeting for our patients.

All nurses know that waterproof sheeting in large or small quantities is used in nursing for two purposes—to keep *out* wet from beds and bedding, and to keep *in* heat when placed over poultices, stupes, &c.; and it is on this account I object to it in our portion of nursing work; it *retains* the heat of the body, and we do not want to keep our patients hot. The heat of our bodies is not *retained*, but *renewed*, constantly generated, and as constantly passed off through the pores of the skin, and whatever interferes with this free cutaneous transpiration, even in health, leads to some form of pyrexial disturbance, and we suffer from feverish colds, chills, &c.

Lying-in patients perspire profusely and are prone, on the slightest provocation, to develop febrile symptoms; and we shall see that nearly all the changeful phenomena of convalescence are marked by a rise of temperature. When we place an *impervious* material under a large portion of their bodies, that throws back as it were the superfluous animal heat, instead of passing it off, are we altogether wise? Hence I always advise the waterproof to be taken away, and *absorbent* sheeting, or soft draw-sheets to be used instead at this period of convalescence, unless there is some special indication to the contrary, compelling us to go on with the waterproof. Whilst upon the question of absorbent or non-absorbent appliances, we will discuss those modern contrivances that are now so much used in child-bed nursing, and point out under what conditions we may find the absorbent pads more serviceable than the diapers we used during labour, and continued through what we will call, by way of distinction, the hæmorrhagic stage of convalescence. By the third or fourth day the uterine discharges (lochia) are taking on different and distinctive charac-

teristics. It is at this period that our newly-found "substitutes" stand us in good stead, and as these sanitary contrivances conduce to the health and comfort of women at other periods than confinement, it may interest some of my younger nursing readers if I tell them a few facts about them that have come to my knowledge. Many years ago a most distinguished provincial surgeon, now deceased, required a pad to replace lint dressings for wounds, sores, &c., that should be absorbent, light, soft, porous, and anti-septic; all these qualities were found in cotton wool that had undergone certain chemical processes, and been desiccated to such an extreme degree, so as to enable it to absorb all discharges from, and yet for a length of time keep a clean surface to, the affected parts. And finally the prepared wool had to be covered with a coarse but soft cotton gauze, which kept the pads together, and thus they were made up to any size that might be required for surgical use.

We must now resume our duties. The lady is washed and changed, the bed-linen changed, and the bed made. If she is not too fatigued, you can loosen, comb, brush, and arrange her hair. I like this done last, as it sometimes tires her more than anything else, and as there is now nothing more to be done, the patient can rest after it at once. Have the bedroom made tidy, but no sweeping, and as little noise made as possible over all that has to be done, and remember to ventilate the room as directed in a former chapter. If the lady should feel somewhat faint after the exertions she has undergone, a cup of milk arrowroot, milk, or a glass of wine, with a biscuit, will help to carry her on to the early dinner hour. Let me impress upon nurses the importance of having the lady's meals punctually served, viz., that she should never be allowed to get over-faint for want of nourishment. We have entered on our fourth day of duty, and the dinner may be a basin of good beef tea, with toast, and a farinaceous pudding. And here let me observe that these latter are better made *without* eggs than with, and in my judgment it is more judicious to give her such important alimentary substances as milk and eggs separately than together; and furthermore that these last should be as *lightly cooked* as possible, which cannot be the case if you add them to a

pudding that has to be *baked* for some time. The only form that I allow eggs and milk to be taken together is in the form of *custard* (*not* custard *pudding*), which is nicest taken cold, and as you all know, the great art of custard making is *not* to *set* the eggs. A cup of well-made custard is a very favourite form of light refreshment for our patients. Hence I take objection to the domestic baked or boiled custard pudding at this stage of our nursing duties, and still more strongly to that dreadful compound, boiled batter pudding, which generally means a *maximum* of flour to a *minimum* of eggs, and is about as solid as a billiard ball. The farinas mostly used are rice, tapioca, and sago, though there are many others that may be preferred. A very simple way to prepare a baked tapioca pudding, and which my patients invariably take to, is the following:—Take a medium-sized pudding-dish, and cover the bottom with a good layer of fresh butter, over that sprinkle, say, a tablespoonful or more of caster sugar and a small pinch of salt, half a teacupful of the best tapioca, which you scatter over the butter and sugar. If some of the grains of tapioca are larger than others, pick them out, or crush them small, as it is important that the tapioca should be equally cooked, or the pudding may eat “lumpy.” Over the farina pour a good pint of milk, and let it soak four or five hours until a large quantity of the milk has been absorbed by the grain; then let it bake in a *slow* oven for at least two hours. The pudding should be a nice brown colour at the top—a sort of “toffy,” in fact—and it should eat as smooth as a jelly. This pudding should be made, say, after breakfast, and it will come in very nicely for the lady’s supper, Rice can be prepared in a similar manner. The popularity of these simple preparations in my own practice leads me to bring them before the notice of my younger nursing readers, and to impress upon their minds that farinas are better prepared without eggs than with them.

After the midday meal should come repose, and, if possible, an hour or two’s sleep, which should be encouraged by a darkened room and perfect quietude, and I strongly enjoin our patients neither to read nor work too soon after their dinner; we want them to keep back a reserve of strength for future use, and we must cultivate that im-

portant factor, good digestion, to help us on our path of progress. The remainder of the day is much the same as the last, but it brings with it a nursing point of much importance—the choice and administration of an aperient, which on the fourth day is generally and prudently prescribed.

The form of the aperient will depend upon medical direction or the wishes of the lady. Ol. Ricini is about the quickest and surest in its effects, but many patients cannot take it. It may not be generally known that the oil can be prepared as an *emulsion*, in this wise:—Add one drachm of Sp. Amm. Aromat. (commonly called Sal volatile) to a table-spoonful of the oil; stir them up well together, and you get a sort of jelly (a delicate form of saponification, in fact); this “jelly” can be swallowed readily, and leaves but little, if any, taste behind; a few drops of essence of peppermint or ginger can be added if preferred. The writer has known this form of preparing a dose of Ricini taken when all others have been refused by the patient, so I just give it as a suggestion to be made use of at the discretion of the nurse.

Pil. Rhei Co. is also a good aperient. Compound liquorice powder in tea-spoonful doses is given, but it produces nausea in some patients. I think you will find that some porridge, made with the *coarse oatmeal*, and eaten with milk (or, better still, cream), will come in nicely for the lady's supper. There is nothing simpler to make than porridge; few things more uncertain in results in the hands of the household cook. It should always be made with water (not milk) that has come to a sharp boil, and the meal *dropped in from* a cup, and stirred briskly about for a minute or two, and then cooked for an hour. A pint and a-half of water will take up a tea-cupful of meal. When ready pour what you require into a soup-plate, as it cools quickly in that. The test of the meal being thoroughly cooked is its shrinking from the edge, and forming a sort of loose cake in the soup-plate. I greatly recommend porridge for supper whenever the patients will take it; the meal is easy of digestion, and has a slightly aperient action that is extremely beneficial.

Amongst the minor troubles of convalescence there is

none that occasions more distress to our patients than an attack of constipation, which is sometimes as hard for them to bear as labour itself. What are the causes that tend to produce it, and what the measures best suited to alleviate, if we cannot altogether avert the evil, are points of much interest in obstetric nursing.

As the trouble is mostly intestinal, we will in the briefest manner outline the anatomy of the intestine, which consists of two parts, small and large, and these again are at once divided and connected by a singular structure called the ileo-cæcal valve. The functions of these two portions of the intestinal tube are remarkably different, and so are their structural peculiarities. The small intestine commences at the pyloric end of the stomach, and ends where the large begins—at the cæcum; it is intensely convoluted, and so intimately associated with all the digestive viscera that it may almost itself be called a digestive organ, for therein most of the great processes of alimentary assimilation are carried on. Nature having with infinite care and complexity extracted from the partially digested substances sent from the stomach into the small intestine all that she requires for her use, passes on the waste products of digestion through the cæcal portal into the large intestine. This effete matter is *gradually* (I wish you to note this) removed from the system by a series of muscular movements called peristaltic, peculiar to the whole intestine, but assisted in the colon by a sacculated structure special to it. The large intestine takes a winding but far less devious course than the small, and ends at the commencement of the rectum, the pelvic portion of the large intestine.

From this necessarily imperfect sketch you may gather that the function of the small intestine is nutrition, of the large excretion; and we will now consider the relation of the uterus to the colon, and in what manner it may affect it. The uterus is, as you know, a pelvic organ, and under normal conditions it does not enter the abdomen unless in its gravid state, and we may fairly say that as far as the abdominal viscera are concerned, it is an intrusive and most unwelcome guest, and were it not for the elasticity of the abdominal walls this pressure upon the viscera would lead to serious, if not fatal results. The first of the abdominal

organs to feel the ill effects of the ascending uterus is the colon. The cæcum that marks the commencement of the ascending portion of it lies in the *right* iliac fossa. In its descending portion there is a curious deflection that anatomists call the sigmoid flexure of the colon, from its S-like shape, lodged in the *left* iliac fossa. The pressure of the gravid uterus upon these portions of the large intestine tend to impede its natural action and to produce the constipation that is one of the troubles of mid-pregnancy. After delivery the uterus remains in the abdomen for some time, and in its descent towards the pelvis we get a recurrence of the cæcal and sigmoid pressure first mentioned. The weight of the abdominal walls and the uterus is also felt by the intestine. During the expulsive stage of labour the pelvic portion of the colon, the rectum, is much pressed upon by the foetal head, and its tonicity weakened, and all obstetric nurses know that the worst troubles of constipation culminate in rectal inertia. Repose in the recumbent position also tends to impede the natural peristaltic action of the intestine, just as conversely the upright position and exercise favours it. Flatus or an accumulation of air in the intestine is a cause of constipation by distending its walls, and thereby impeding its natural action, just as an over-distended bladder prevents natural micturition.

The narcotics that are sometimes given hypodermically, or otherwise, to induce sleep or soothe pain after delivery, tend to constipate the bowels, and some of the most troublesome cases of rectal inertia that have come under my notice have been due to this cause.

Having enumerated some of the causes that lead to constipation in lying-in women, we will point out some of the measures best calculated to mitigate the trouble, and here the homely virtue of "prevention" far transcends any effort at "cure." I have shown in a previous chapter the advantages to be gained by giving an aperient to our patient at the advent of labour, to clear the whole of the intestinal tract, which enables us to defer the administration of any kind of *post-partum* purgative for some days after delivery. The common sense course of treatment indicated for our patients during the important period that intervenes between the completion of parturition and the commencement of

lactation, as it bears upon the subject we have just been considering, is careful feeding. Now what should be our guiding principle here? A *maximum* of nutrition with a *minimum* of waste—supporting the system by all means, but in no wise embarrassing it; and we find a solution of the problem in the simple foods to which I have so recently directed your attention. Strong broths, lightly cooked eggs, farinas, meals, milk and bread, supply the alimentary requirements of the system at this particular period. With respect to milk, I am of opinion that it is better given in combination with other alimentary substances than *plain*; better cooked than uncooked; for instance, oatmeal that has been thoroughly cooked in water, and in the form of gruel or porridge given with added milk, affords a safer *pabulum* than the solid constituent of plain milk (*casein*), as it is apt to occasion intestinal obstruction, which just now we are anxious to avoid. When milk has to be given in large quantities, as in cases of serious *post partum* hæmorrhage, the curd should be pre-digested with a Zymine Peptonizing Powder added to every pint of milk given, or any other of the peptones so easily obtainable. The albumen required for the system can be obtained from strong broths, or the juices extracted from fresh meat, in concentrated form, or the meat essences of commerce (if we have nothing else at hand), which have the advantage over milk in not containing a solid constituent. The great divergence of opinion with respect to feeding recently-delivered women, ranging from water-gruel on the one hand, to beef steaks and bottled stout on the other, render it necessary that you should have some rational ground of treatment to go upon. "Circumstances are said to alter cases." They cannot alter facts, and nature must be aided, not thwarted, in her plans. The advocates of the "heroic" viands we have just mentioned are continually telling us "we must support the system." Quite so! But we must still be permitted to doubt if we really are doing so, when we give a sensitive parturient woman the diet of London coal-heavers, until it has been convincingly proved that the conditions in both cases are identical. Evil is not only "wrought by want of thought," but wrought by thinking wrong. There is no portion of our work in which prudent counsel is more needed than in this matter

of diet. Rest, warmth, sleep, pure food, in addition to the other necessary and topical measures, all "support the system," and help on the consummation of all our efforts and hopes—good recovery.

There are also mechanical means for relieving the bowels. A simple and effectual purgative enema can be made with common salt, dissolved in warm water, three table-spoonfuls of the former to three pints of the latter. You always make more of the solution than you require, that you may work your syringe properly. Before giving an injection, take a piece of waterproof sheeting and place it about the middle of the right side of the bed, and close to the edge; and over this put a warm Turkish towel or a piece of flannel. Put the salt and water into a washing basin, fix the nozzle—well lubricating it with vaseline, especially at the base—on to your syringe, and charge it ready for use. The patient must lie close to the edge of the bed, and on her left side, having the knees drawn up; the night-dress must be fastened up all round above the hips. Turn back the bed-clothes longwise, and as little as possible. Have the bed-slipper handy, and warmed. Bring the basin to the side of the bed—the brim should be level with the bed. Standing on the outer side of the basin, you can keep it in position between you and the bed. Pass the nozzle end of the syringe carefully into the rectum with your right hand; keep it there with your left whilst you *gently* work the ball of the syringe with your right hand, not removing it until you have finished injecting. Keep the feeding tube well under the water all the time. When you find the water returning to the syringe, remove it *at once* (never force it); take away the basin. The patient must now lie on her back, and the slipper be placed under her. Do not remove the waterproof, &c., until you are quite sure that the enema has fully operated. When that is the case take it away, and put the absorbent sheeting in its place, with clean napkins. The salt and water injection acts upon the colon by stimulating its muscular contractions, and this way will be found serviceable.

In cases of rectal block it is of course unavailing, and we have to resort to other measures, glycerine being about the best of them. It must be applied with a glycerine enema syringe. They are made of metal or vulcanite, something

in shape like a common squirt. The nozzle is long, rounded at the end, and somewhat curved. Charged with glycerine—the quantity used being generally from half an ounce to one ounce—lubricate the nozzle, but do not choke it up, with the vaseline, and pass it gently between the block and the wall of the rectum in a backward direction. When the glycerine is all injected, withdraw the syringe; it very rarely fails in its action. The patient must lie in the same position as when you administered the enema.

These simple measures apply, of course, to simple cases, which are all we are now considering; therefore it is not necessary to enter into the matter of enemata of various kinds, or suppositories, that we have to administer under some conditions in Midwifery Nursing.

Whatever may be the mode adopted to obtain an action of the bowels, the patient should be kept extremely quiet on that day. No bed-making nor vaginal douching to be done, external bathing of the genitals being the safest. Do not forget to use a soft mop for this purpose; it is far better than the flannels, or, worst of all, the sponges generally used for that purpose. At this time, about the fourth or fifth day from delivery, we can make changes in the diet; but the consideration of this matter, with others, will be touched upon in my next chapter, which will treat of the important subject of lactation.

CHAPTER VI.

LACTATION (DUTIES DURING).

LACTATION—FOUR CONDITIONS UNDER WHICH IT MAY HAVE TO BE CARRIED ON—BREAST MANAGEMENT IN EACH—REMEDIES TOPICAL AND MEDICINAL—FRICTION—DRAWING—SLINGING—FOMENTING—PURGING—BREAST PUMPS—HOW TO USE THEM—NIPPLE TROUBLES—HOW TO HEAL THEM—NIPPLE SHIELDS—VALUE OF IN LACTATION—GENERAL MANAGEMENT OF THE PATIENT IN EARLY SUCKLING.

BEFORE entering upon the duties of this critical period of convalescence, we will just glance at the phenomena upon which lactation depends and co-exists.

The mammary symptoms of gestation are almost coeval with conception, and follow, as it were, the various developments of the uterus during the whole of pregnancy, and for some time after delivery. About mid-period, when the enlarging uterus is ascending into the abdomen, the mammary signs become more marked, effecting alterations in the breasts, the nipples, and the areolæ. With respect to enlargement of the former, I may remark, *en passant*, that it may be due to other changes in the uterus besides pregnancy, for when that organ becomes abnormally increased in size, or escapes into the abdomen, enlargement of the breasts occurs, as would be the case in pregnancy. An ignorance of this fact has often led to the most erroneous and painful conclusions. With respect to mammary enlargement, then, we cannot regard it as a *positive* sign of pregnancy, unless it be accompanied (which is not invariably the case) by a secretion, which we can hardly call milk, as it is sometimes a colourless fluid, from the mammary glands.

This is a diagnostic sign of pregnancy ranking in importance with the pulsations of the foetal heart. Next to these are the singular changes that take place in the areolæ, the most noticeable being a discolouration of the disc, and a

peculiar enlargement of the small tubercles with which it is studded, and a sort of moisture or dewiness with which the surfaces are imbued. These areolar changes are special to pregnancy, and exist under no other uterine conditions; but their absence would not altogether *negative* pregnancy.

The condition of the nipples in the latter months of gestation often occasions much distress to women: tenderness from excoriation of the cuticle, and sometimes an irritating feeling of dryness, with scaling of the skin, and also a painful cracking at the base of the nipple. The remedies used for these troubles are multiple and conflicting, and many of our patients have pet plans of their own for relieving them, astringent applications being in much favour, though I myself denounce their use. However, there is one point with respect to nipple management that cannot be gainsaid, though, I regret to say, it is but too often disregarded—the avoidance of *all* pressure from corsets. Deformities of the nipples, that lead to so much trouble during lactation, are often due to the amount of compression to which they have been unwisely subjected before or during pregnancy. The enlarging breasts require the support and comfort of well-cut corsets, but no pressure from them. I recommend the knitted ones during pregnancy, as they are soft and porous. They should have as few as possible of the “bones,” “steels,” or “whatnots,” that are used to give that delightful (?) appearance of stiffness to womankind, so artistically (?) in accordance with all that is most beautiful in their form!

With respect to the nipples, for tenderness, dryness, and irritation, glycerine, or glycerine and borax B. P., applied with a camel's hair brush, will be found to be cooling and soothing. For simple excoriation I found “camphor ice,” that is, white vaseline solidified (sold in small cakes in tins), very soothing; break off a small piece from the cake, just mould it between your fingers, and smear it over the nipples, and protect them with a piece of very soft rag or lint. For fissures glycerine and gallic acid B.P., applied well into the crack with a small camel's hair brush, is often serviceable; the preparation stains the linen, but it washes out; you require to use very little of it. A piece of soft rag placed round the nipple prevents a good deal of staining.

Before quitting the subject of the management of the breasts during pregnancy, I need scarcely say how carefully they should be guarded from injury, such as *compression* or blows; these latter especially often lead to serious trouble from breast inflammation due to that cause, and only found out when lactation sets in.

Having briefly pointed out the mammary changes due to gestation, we will pass on to the consideration of those greater changes, that commence at its termination, and which are so intimately associated with that singular process called the involution of the uterus; and again we shall find how close is the sympathy that exists between the breasts and the womb.

The atrophy of the proper uterine tissue commences about the fourth or sixth day from delivery, and is coincident with lactation. What is the meaning of the word "atrophy" as applied to any organ or limb of the body? Wasting. From what cause? Defective nutrition, due to a cutting off of the arterial blood supply that is the life of every organ of the body.

The blood demands of the gravid uterus are enormous, not only for its own needs, but for the growth and maturation of the foetus. If you refer to your text books you will see that the distribution of the arterial blood to every organ and part of the body is directed by the vasa motor nerves that accompany the arteries in all directions, and wherever arterial blood is wanted arterial blood is sent. During gestation the uterus requires and receives an immense supply. After parturition, the occasion for it ceases, the needs of the unborn child have been fulfilled, and nature diverts the nutrient stream to the breasts, and provides for the sustentation of the infant in its new and separate existence. The uterus atrophies, the breasts enlarge, and lactation completes the cycle of gestation. Thus we see that the sexual life of woman in its highest and purest developments—the maternal and conjugal affections—is governed by the sympathetic nervous system in all its marvellous beauty.

Before entering upon the duties required during lactation, we will take into consideration the various conditions under which breast management has to be undertaken and the principles which should guide us in this important matter.

There are four leading points to be borne in mind with respect to our patients: (1) Those who do not intend to suckle the infant; (2) those who do; and in either case whether they are, (3) primipara, or (4) multipara.

Speaking generally, we have three kinds of remedies to resort to—topical, medicinal, and dietetic—and in the first-mentioned, four methods of applying them—rubbing, drawing, slinging, and fomenting; and all these different ways and means must be adapted to the circumstances of each case, if we wish to get good results from them. Dogmatic teaching is of little avail here, for there is no part of Obstetric Nursing that requires the exercise of judgment and common sense more than that upon which we have now entered.

We will begin with the case of a primipara who does not intend to suckle. It may be three or four days before the flow of milk sets in, and we shall have to take repressive measures at once, which I need scarcely tell you are distinctly unfavourable for the patient. Repression of lactation is no part of Nature's plan. We take her by the throat, as it were, and immediately or remotely she is apt to resent it.

First, as to what medicines we shall have to give. They must be salines or watery purges that act upon the kidneys as well as the bowels, seidlitz powders being most in favour. Some accoucheurs give as much as *two* of the large powders to one of the effervescing. In my own practice I mostly give what we began with just *before* labour—two compound rhubarb pills at bed time, and a seidlitz powder first thing in the morning, given in luke-warm water, and in the way I have already told you. Much goes to *how* you administer these powders, and *when*, if you wish to get good results from them. They may be given in these cases *without* the addition of the effervescing powder; but that point, and also whether one or two of the large powders are to be given, will depend upon medical direction, and be governed by the circumstances of the case as to whether the flow of milk be profuse or scanty; but in either case you quite understand we require a watery purge. There are many other medicines besides these I have mentioned, but these are used by most accoucheurs. There is a purging powder of jalap, ginger,

and potassa sulphurata, that is useful in these cases, taken in a little warm tea early in the morning; and in this case you do not require pills at night.

When we are obliged to do *wrong*, we must try and do it the *right* way. You must take great care of your patient the day these purges are acting on her to avoid chill in every way. There must be no bathing, vaginal nor external, and only the hands and face washed morning and evening. If the feet are at all cold, have the foot-warmer in the bed. Give the lady an egg beaten up in her tea at breakfast (which should not be given for at least an hour after the powders have been taken). At noon, a basin of beef-tea thickened with arrowroot. For dinner, some chicken panada, with some warm brandy and water. For supper, milk, arrowroot, or cornflour. The patient should be encouraged to sleep as much as possible during the day, and no visitors allowed. The aperients I have just indicated are distinctly harmful. We only give them when we are obliged.

Having briefly pointed out the usual medicinal and dietetic measures taken in these cases, we will pass on to the topical ones, which are equally necessary to carry out the treatment, and differ from them in having to be more adapted to varying circumstances than the former, which are pretty much the same in all cases—purges. With respect to the case we are now considering—a primipara who does not intend to suckle—there is one point of prime importance in our topical measures to be borne in mind—there must be no *drawing* of the breasts if possible to avoid it, although it may be necessary to have recourse to *gentle*, well applied, friction. For repressive applications we can resort to cold applications simply, or arterial sedatives. We cannot alter the course of the blood to the breasts any more than we can stem the current of the in-flowing tide; but we may lessen its force.

Let us take a simple case first in which we get fulness of the breasts from the in-flowing milk without tension or tenderness to any great extent, cold applications may be quite sufficient for our purpose, such as the familiar cambric handkerchief dipped into a lotion of eau de Cologne and cold water, and placed all over each breast and left there till it gets dry, and then renewed. After this treatment

place soft flannel or white wadding over the breasts to avoid chilling the skin.

Our cases are not always so simple; instead of mere fulness we get extreme engorgement, tenseness, and tenderness. Here we must resort to arterial sedatives, *gentle* friction and slinging. With respect to the former, belladonna holds a high place, being more used than any other. We use it in Obstetric Nursing in three forms—plasters, ointment and liniment; the last being the weakest in belladonna. For continuous use the first are in high favour with most accoucheurs: they are most uncomfortable and disfiguring applications, and in my judgment rarely needed, as the other preparations of belladonna answer almost all purposes, and women dislike them, besides which, you cannot keep the breasts clean (an important point) with plaisters over them.

With respect to the conditions just indicated—viz., engorgement, tenseness, and tenderness—there are three points to be thought about: first, what form of belladonna shall we use? As we require a lubricant as well as a sedative, equal parts of belladonna liniment and pure glycerine is most serviceable. We shall have to use friction, and *how* are you going to rub? I have so often witnessed the ill-effects of misdirected efforts in this matter of breast friction that I must direct your thoughtful attention to what I am about to tell you.

In the first place, then, we are not going to rub at all—in the ordinary sense of the word. In an early chapter I pointed out to you the importance of the *palm* of the hand in our portion of nursing work, and in that instance it related to certain manipulations required by the uterus, and here again I shall have to emphasise its practical use. It is not unusual to see a nurse proceeding in this wise: the ends of her fingers are dipped into the embrocation (some of which has been poured into a saucer), and the breasts “prodded” about with it, in various direction, generally *from above downwards*; first on one side and then the other, the breasts being in the meantime unsupported; these remarkable manipulations go on until the liniment is used up, and we may safely say the same with the patient! Other nurses again, go flat-handed to work, and in a style that would be invaluable to a member of the shoeblack brigade.

We do not intend to emulate these shining examples of "how not to do it." We have engorgement and tenderness, to deal with, and we go carefully and gently to work. Put the belladonna and glycerine liniment on to the hob, or in a jug of hot water, to get a little warmed before you begin; pour some of it into the palm of your right hand; support the breast from *below* in the palm of your *right* hand, holding it well up; spread the liniment well over the top part of the breast with your left hand, and then taking the whole circumference of the breast between the palms of both hands, and having the fingers closed over it, gently work the breast about. Then put some more of the embrocation into the palm of the *right* hand, and apply it to the under part of the breast, repeating the same manipulations as before; continue them until you feel the breast softening under your touch, and some of the milk pouring from the nipple. When this takes place desist from your efforts.

You must be particularly careful *not* to let the embrocation touch the nipple; in fact, you must keep clear of the areolæ as well during the time you are rubbing the breast. After you have finished, wrap them up in soft flannel, cotton wool, or white wadding, which is about the best, and then prepare for slinging them.

Among the duties demanded by lactation there is none that affords such comfort to your patient, or better helps on breast treatment, than careful slinging, whether in cases of simple engorgement or in the distressing hypertrophy of the breasts that so often accompanies lactation, slinging is an indispensable accessory, and half the efficacy of poultices or fomentations depend upon the way in which that breast support is carried out.

What shall we use for slings? We have various things provided for us, such as old silk scarves or handkerchiefs, or woollen or cashmere comforters, or strips torn from old sheets or tablecloths, preferable to any of these, you will find flannel the best either old or new. It is soft and warm, without being heating, light and porous; it does for wet or dry slinging, as it does not stiffen under moisture, or get cold, and holds the pins in well that fasten the slings. The strips should be from a yard and a quarter to a yard and a half long, as may be required, and from nine to

ten inches wide, but these measurements can of course be modified to suit individual cases.

How are you going to apply these strips? It is no unusual thing to find a nurse putting all the weight of a heavy breast round our hapless patient's neck, and thereby nullifying all the comfort and support a sling should give. Other nurses again make their slings so *narrow*, that they are more like a rope round the breast than anything else. Let us avoid these common errors, and endeavour to substitute for them other and more rational and comforting arrangements. The rule to be observed in slinging is to support all the weight of the breast from the shoulder. To do this the slings must be put on cross-belt fashion, the *right* breast being supported from the *left* shoulder, and the *left* breast (if both have to be done) from the *right* shoulder, and securely pinned on either or both shoulders respectively.

Before fixing the slings remove the bed-jacket, and slip the lady's night-dress from the shoulders almost to the waist. I need scarcely tell you that slings should *always* be placed *next* the breast. The clumsy practice of putting them on *over* the night-dress is as reprehensible as binding over the chemise used to be, and in many quarters still is, the practice. You must put a woollen shawl or handkerchief over the patient's shoulders whilst you are fixing the slings, to avoid chilling. She must, of course, sit up in bed to have them done.

We will begin with the right breast, and I trust do it *rightly*. Roll up one of the slings to within three or four inches of its length, place it on the left shoulder, and hold it there with your right hand. With your left hand pass the sling over the back, under the arm, and below the breast, well holding it up, and bring it back to the left shoulder where you started from; fasten both ends firmly together with a binding pin temporarily. Having positioned your sling, and both hands being free, you have to fit it to the breast, and in the case we are considering, to pack it with the wadding, which must be put all over above and below. You may have to tighten the sling again after this; it is most important to have the breast as high as possible, consistently with the comfort of the patient.

You now fit the sling to the padded breast, and make a

sort of cradle for it. To do this you will have to pin it here and there in little pleats, and I use very small safety pins for this purpose, it is more convenient than sewing, and ordinary pins are neither safe nor suitable for the purpose. Having thus slung, padded and fitted the right breast, you repeat the manipulations I have described on the left; you then replace the night-dress. Before fastening up the front you must pass in one of your hands up to either shoulder, put your fingers *under* the ends of the sling, and with your other hand run a safety pin, or better still, one of the modern double-pronged metallic capped surgical pins; fasten the sling to the shoulder of the night-dress, and then take out the temporary pin, which, not being guarded, is not safe to be left in. This plan prevents the slings from slipping off the shoulders. Replace the bed jacket.

The breasts should be left thus supported and packed for at least twenty-four hours. Quiescence is an important point here, and we want to avoid chilling as much as possible. We may have to have recourse to fomentations or some other form for the application of heat and moisture; but, in a great majority of the cases we have been considering, they are not required.

I have brought before your notice the management of a case in which the milk-flow has to be repressed and the patient a primipara. Bear in mind, in these cases, that, when once repressive measures are begun, they must be steadfastly continued during early convalescence: the tide cannot be stemmed all at once, and the blood supply to the breast, like the tide, ebbs and flows.

Next we will take the case of a primipara who intends to suckle, and we shall see a great difference in the treatment required to meet it. The most critical, anxious, and difficult portion of our work; the evil effects of neglect, ignorance, and mismanagement in these cases leading but too often to lifelong and irreparable damage.

In the first place we do not require repressive measures; we rather wish to encourage than diminish the flow of blood to the breast. We have precisely the same natural conditions to deal with that we had in the case we so recently discussed, but we meet them and treat them in a widely different manner. We use no purges. If we have a copious flow of

milk, with engorgement and tenderness, we relieve the breasts, not the system, so we resort to a measure we did not require before—drawing; and again we have nipple troubles to encounter that gave us no concern before.

Let us assume that it is the fourth day after delivery, and that the flow of milk is such as to cause engorgement and tenderness of the breasts; our first duty is to relieve them by careful drawing.

Not many years ago it was the custom to employ women as breast-drawers, and is now in rural districts. Uxorial aid again was pressed into the service. The great disadvantage of these adult efforts was, they were intermittent, the milk being summarily ejected each time they were repeated; hence the nipples were made tender, and the breasts rather teased than comforted. The best breast-drawer under the circumstances we are now considering, viz. engorgement, was a two months old baby, of an obliging disposition, good suctorial powers, and a vigorous appetite; under these conditions our little ally carried all before him, and what was a great deal more to his advantage *down* him, to the great comfort of our patient. Times are altered now, and we have a mechanical breast-drawer to rely on instead of adult or infantile suctorial exertions.

I will bring before your notice the three kinds of breast-pumps most known and used.

The first I will describe was made on the piston principle entirely of glass. It was too weak for the strain put upon it, and was hardly safe for that reason, and constantly getting broken; but for all this they were very efficient in a light, and skilful hand. The breast-end of the pump was just like those of to-day, the piston part resembled those of the vaginal syringes, that used to be, but never ought to be used for or by women, as they are excessively dangerous.

Next to this kind of pump was another of more modern make, all glass with a long india-rubber tube with a glass mouth-piece for drawing attached to it, and, of course, a glass receptacle for the milk. This familiar contrivance was called a "Breast Exhauster." Judging from what I have seen, suffered, and known of this instrument of torture, I should rather call it a "jaw exhauster." They do for simple cases

and self use, and I always encourage those patients who prefer them to "exhaust" for themselves.

Third and last is the almost universal breast pump, with the india-rubber suction ball. Before you apply them to the nipple wet all round the rim of the glass end, press it firmly against the nipple before you begin to work the pump, which you do by pressing and then relaxing the suction ball with the palm of one hand, whilst you keep the pump in position with the other.

This is all I have to tell you about breast-drawing, whether by adult, infantile, or mechanical means, but there is one point common to them all, that I must most particularly impress upon your attention. In all cases of engorgement, *before* any efforts at drawing are made, the breasts must be softened and tension relieved in the *first* instance by *gentle* friction and lubricants; a neglect of this precaution has led, and ever will lead, to a frustration of *all* the methods I have described for giving relief to the breasts, and will, in fact, aggravate rather than alleviate the distress.

I have fully described to you *how* breast friction should be applied, and I need not repeat the instructions. The only other point to consider is the choice of a lubricant, which, in this case, need not contain an arterial sedative. I prefer the camphorated vaseline of the Cheeseborough Company to anything else, but camphorated oil and other kinds are used. The object of employing *friction* before applying the breast pump, &c., is to clear the lactiferous ducts of the thick colostric milk that often blocks them. When they are cleared, there is not much difficulty in drawing off the milk by any means you or the doctor may decide to employ.

There is, again, another difficulty to meet in these cases—nipple troubles, and very tiresome they often are, and in some cases insuperable. I have pointed out to you how seriously the nipple may be damaged by *compression* before and during pregnancy, and in a great measure the evil could be wholly prevented by rational precautions beforehand. When we consider how much a defective nipple impairs the beauty and purpose of the breast, I earnestly impress upon young mothers who wish and mean to nurse their children, the

necessity of avoiding this common, and may I add *vulgar*, error?

There are congenital, as well as acquired nipple defects, and these must be regarded in the light of misfortunes, and not faults. However, be our difficulties in this way what they may, we must do our best to surmount them.

We will take the case of a normal nipple. It should be slightly conical, not too large, and sufficiently prominent for the infant to grasp with ease; and here we may have simple excoriation at the apex, or fissures at the base, both of which are frequent and painful conditions, and if not attended to will impede, if they do not altogether prevent suckling. In the former case emollients will be all we require. Some *white* vaseline spread all over the nipple, just *before* the infant is applied to it, and left there, is as good as anything. When the infant is taken from the breast, the nipple must be wiped *perfectly* dry with a soft handkerchief. Never neglect this precaution; to allow the milk to *dry* on the nipple is in itself a source of irritation. When the nipple is wiped, repeat the vaseline, and place a piece of soft rag or lint over it to protect it from the air or chafing against the night-dress.

There is one form of application to which I distinctly object—the mucilaginous, usually a solution of gum arabic, that used to be painted over the nipple before the child was applied to the breast, and immediately afterwards. It is most irritating if it dries on, and, mixed with the milk, turns sour, and is altogether objectionable.

Fissures, which are often the result of mismanagement, are generally situated at the base of the nipple. Astringent applications are the best. The gallic acid and glycerine B.P., applied well *into* the crack with a small camel's-hair brush, nearly always gives relief. The powder dries into the crack and fills it up, and protects it from the air. Wipe the nipple before you put the infant to it, as the lotion is brackish in taste, but otherwise harmless.

Our troubles are not always so easily overcome by the means mentioned, and in order to soothe and heal the nipple we must protect it from the irritating effects of the infant's mouth when sucking, and we must use some kind of shield. I know of nothing in modern Obstetric Nursing that has been of more use and comfort to our patients than the well-

constructed nipple shields of to-day ; it is quite distressing to think of the pain and misery lying-in women had to endure from tender nipples for the want of those simple mechanical contrivances.

We must now turn to our shields, and describe the different kinds used and how to use them. I shall confine myself to four sorts (there may be forty for all I know)—the flat or discoid, and the bell-shaped, made of glass ; and these again may be short or long. Of the flat shields, the first that ever came under my notice was made of wood—I think box. It was circular in form, about the circumference of an ordinary areola. It had a conical projection in the centre to fit over the nipple, and the end was perforated with holes. The shield was placed over the nipple, and the baby was put to the breast, and had to do the best he could, but it was rather “hard lines” for him. This wooden contrivance certainly protected the nipple from the baby’s mouth, but it was very hard and uncomfortable for the mother as well as he. Then came another flat shield, made of *all india-rubber*, just the shape of the other ; it stuck to the nipple like a limpet, and the more the child pulled the tighter it stuck. These were dreadful things. I condemned the first I ever saw ; the remedy was worse than the evil, and in point of fact the flat shields for suckling are a mistake, whatever they are made of. We will now make a move in the right direction, and get to the *short* bell-shaped glass nipple shield, with a teat at the narrow top part ; they are full of faults, like the others, and the one great disadvantage of them all is that the mother has to sit up in bed to use them. Again, this short glass shield has an india-rubber teat to it, and nine times out of ten it was far *too* long, it tickled the back of the infant’s throat, made him sick, and disheartened him for further proceedings. To obviate this difficulty I use a bone ring like that on a feeding-bottle-teat. The advantage of this is that we can shorten the teat at will, and also give the child a *point d’appui* for his tongue when sucking ; still, a *short* shield is not the *right* shield.

We will now pass on to the long-tubed shields, which combine all the points we require—protection to the nipple, comfort to the mother and child. The nipple end is of glass like the short shields, but there is a point of difference

of much importance in the shape of the narrow end of the shield, to which the tubing is attached ; it should be bent at *right angles* to the shield, and not be *straight*, as it is in the short shield, in order to facilitate the downward flow of the milk. The length of tubing varies—nine to ten inches is none too much, as it can be altered to suit circumstances. At the far end of the tube is a connecting joint called a union, to which tube and teat are attached at either end. Now a great deal goes to this union, as to whether it be made of wood, porcelain, or glass. The first is the worst ; the last is the best, as it is better to keep clean, and you can *see* whether it is so or not. Nor is it so clumsy as earthenware unions. Having connected the teat with the tubing, you put on the bone disc, which has a hole in the middle to pass the teat through. In selecting these nipple shields always choose the best make, especially as regards tubing and teats. These last should be short, pliable and smooth. You should always have duplicates of tubing, teats, *unions*, and discs by you, that you may fit up or repair the shields when required, as under any circumstances you will have to take them to pieces frequently in order to clean every part of them. With respect to the nipple glass, it should not be *too small*, or the nipple may be bruised by being tightly drawn into it during the act of suction. Having described the shield, let us say a word about how to use it, for a want of knowledge and common sense in this matter may lead to failure, and nullify all the advantages it possesses.

You may ask, “Why is a long-tubed shield any better than a short-tubed one ?” Because the mother is not obliged to sit up to use it, and the infant can be kept in bed while taking the breast.

We will now fix a long-tubed shield. If on the *right* breast, the patient must lie comfortably on her *right* side, her head rather high on the pillow. You wet the rim of the shield, and place it over the right nipple, and press it firmly against the breast, the patient holding it in position herself. Place the infant straight on the bed, his arms perfectly free, and well *below* the shield, about half the length of the tube from the nipple. Before putting the teat into his mouth, draw the breast gently with the shield, and fill the tube with milk, wipe and place it in the infant’s mouth,

and leave the rest to his *savoir faire*. If the flow of milk be too copious, press the tube and so stop supplies for a brief period, and let him swallow what he has received. This is a better plan than taking the teat from the infant's mouth from time to time. You quite understand that the breast is to be kept covered over with the bed-jacket, or shoulder-shawl, and the baby with the bed-clothes, but not smothered up. Make both your patients comfortable, and they can go on as long as they like. When the *left* breast is given the patient lies on her *left* side, and in the way I have described to you. When the infant has finished his meal, you remove the shield, wipe the nipple perfectly dry, and, if necessary, apply the vaseline, lotion, or whatever may be ordered. The shield must be at once rinsed in warm water that has some borax in it, a portion of which must be poured through the *glass* end of the shield, in order to cleanse the *inside* of the tubing and teat, and the shield then immersed in a weak solution of Condy's fluid until again required.

The use of the nipple-shield in the case we have been considering, is only temporary, and must be dispensed with as soon as the nipples are healed. It is but too often the practice to let them get bad first, and protect them afterwards. I do not advise this plan, as it inflicts unnecessary pain. To allow the infant to mould the nipples, as it is called, when they are tender, and to bruise and excoriate them, seems to me anything but wise. When you first discontinue the shield, you will find that the borax and glycerine B.P., put on with a camel's hair brush before you put the child to the nipple, will prevent the infant's mouth from irritating it, and you may have to use this application for some little time after lactation has well set in.

We have now entered into the breast management of a primipara who suckles under normal conditions; in my next chapter we will point out some of the deviations from them, and go on to the breast treatment in multipara.

Lactation does not always run a smooth course, and we not infrequently get a deficiency in the secretion of milk from constitutional causes, combined with two opposite breast conditions, either of which impedes, if it does not entirely prevent, continuous suckling.

First, we have the large, loose, flabby breast, with insufficiency of milk. The infant cannot get enough to sustain him, and gets wearied out with unavailing efforts to "fetch" the milk, although the nipple may be perfectly normal; and we have to substitute artificial feeding for his natural aliment. There may be no pain to the mother from this form of breast-trouble.

Secondly, with scanty milk secretion we get a totally opposite breast condition—a small, tense, and extremely tender breast, suckling giving much pain.

In the first case there is nothing to be done; in the second, hot fomentations with arterial sedatives, and the very *gentlest* friction afford relief. And here I generally use belladonna ointment instead of liniment, and apply it in this wise: take a piece of clean soft rag and fit it to the size of the breast, rounding it plaster-fashion; cut a hole in the middle for the nipple, and large enough to clear the areola; smear the ointment over the rag, and *after* you have fomented apply it to the breast; then place white wadding over all. You will scarcely require slings here, as there is no weight to sustain, and the wadding can be fastened here and there to the night-dress with small safety-pins. Assuming that you dress the breasts at night, leave them till the next morning, when they must be washed with warm soap and water, softened with borax, if necessary the belladonna ointment repeated. If the mother goes on with suckling, the infant must take the breast from a long nipple-shield, so as not to disturb the dressing in any way. Do not forget to cut a hole in the centre of the wadding as well as the rag. There is no real remedy for these two opposite and adverse breast conditions, combined with scanty secretion of milk, but *weaning*, and no difficulty, except from the insuperable objection so many of our patients raise to it. It is so hard to persuade them to avert disaster by anticipating defeat (which *must* come), and only too often, alas! they have to accept both.

Nipple defects, again, will impede, if they do not altogether debar a patient from suckling. There is the flat nipple, where there is nothing for the infant to grasp; the depressed, where the nipple is so driven in, if we may so say, that the

infant has not strength to draw it out. These defects may be remedied in a manner by shields, which give the infant a sort of *point d'appui* in sucking; but, although they are useful for temporary, they are undesirable for permanent use, and not much more comfort to the child than feeding-bottles. Last, and worst, is what we may almost call absence of nipple, for there will only be a sort of chink or narrow fissure in the centre of a small areola. Sometimes a little colostric milk will ooze from the aperture: no infant can possibly fasten on to it, nor are shields any good; nor am I aware of anything that is.

The defects I have enumerated are more often found in primipara. We shall touch upon the nipple difficulties of multipara when we come to that part of our subject.

Before entering upon the fourth division of it, I will say a few words upon a most important point of breast management, especially in first cases, although it holds good in *all* cases. When is the infant to be put to the breast? Common sense would suggest, when the flow of milk sets in. And when is that? There is no definite answer to this question. Sometimes milk is secreted during pregnancy in quantities sufficient to fill the breasts almost as soon as delivery is over; and again it may be three or four days before the milk-flow sets in. Now you would naturally conclude that this simple fact—the presence or absence of milk—would decide the treatment. But such has not been, and, I regret to say, is still not the fact, for there is the widest divergence of opinion on this subject amongst practitioners in midwifery (men and women), and consequently opposite medical directions, enough to confuse the mind of any nurse, and to obscure rather than to define the course to pursue.

It used to be a prevalent, though, I trust, now a fast waning, practice to order the infant to be put to the breast *at once*, in some instances even *before* he was washed and dressed. This custom was most observed in the rural districts, the fountain source of almost everything that is wrong or fallacious in child-bed nursing. Accoucheurs of high authority have ordered, and may for all I know still order, the infant to be placed as soon as *possible* to the breast, be the circumstances of the labour what they may, and the practice used to be defended upon the grounds:—

(1) That irritation of the nipple from the act of suction excited reflex irritation in the uterus, and promoted (?) contraction. So earnest were some practitioners on this point that if the infant was still-born, or too feeble to suck, they would irritate the nipple artificially, in order to carry out their convictions as to the efficacy of the treatment to the desired end. From clinical observation, I incline to the opinion that we "excite" more "irritation" than "contraction" by these manœuvres, and undoubtedly render "contractions" more painful by them. In face of the magnificent resources that modern midwifery places at our command to meet every form of puerperal hæmorrhage, I deprecate the attempt to rouse a tender sensitive uterus into action by the uncomfortable manipulations I have just mentioned, and I hope they will soon become as obsolete as blunderbusses.

(2) That the sooner the infant was put to the breast the sooner he could "mould" the nipple to suit him and "fetch" the milk. (Some of the "babies," mostly country-born, must have had a long way to go for it, as it took them two or three days to "fetch.")

My own experience goes to show the fallaciousness of both these proceedings—viz., "nipple moulding" and "milk fetching." A *good* nipple requires no "moulding," and it takes a very clever "baby" to mould a bad one; hence we have to help him out by the mechanical means I have just told you about. I object to breast forcing in any way whatever. Is it good practice? Would you "force" an empty bladder? though even this consummate piece of folly is not unknown in *bad* midwifery nursing. Let us exercise a little sense and patience in this matter, take care of our patient, and watch events. The milk stream will flow in as surely as the tide, if we will but wait for it; and if *not*, there is some constitutional or extraneous cause for its absence not to be overcome by "forcing," which I believe to be injurious to the mother, and no good to the child.

I have known brain troubles spring from it, the patients getting, especially if primipara, fretful, hysterical, depressed, with loss of appetite, in itself a serious matter. Can it be good for an infant to be put to an empty breast? We know that the art of sucking is an instinctive one, and that the child instinctively expects to get something by it. Can we

wonder when we are told he is "cross," if he does not? A hungry man is an angry man. Can we expect a hungry "baby" to be any better behaved?

On all grounds, then, I deprecate breast forcing as a point of practice, and never countenance it.

There is one aspect of the matter, though, that temporarily baffles us, the wish of the mother herself to *at once* suckle (or try to) her infant, and of course her wishes must be acceded to. Such instances I find rare, and generally overcome or lessen the evil by gentle persuasion.

I rather dwell upon this matter, because I have seen so much unnecessary pain and discomfort caused by it to *both* my patients, and have had so often to do battle in their cause, that I am anxious to impress upon the minds of my nursing readers the importance of this portion of their work.

Under favourable conditions lactation is an infinite comfort and relief to the mother, and aids her recovery as nothing else can (*plus* corrosive sublimate!). It affords to the newly-born infant his only *perfect* aliment, of which he shows his appreciation by growing every hour of his life, and earning imperishable fame by being the very best of "babies."

In entering upon the breast management in multipara, we shall find a great difference in the conditions under which we undertake it, and we shall have troubles to meet that do not occur at all in primipara.

Following the same division of the subject as in my previous chapters, we will take, first, multipara who do not intend to suckle; and second, those who do.

With respect to the former, the measures taken are identical with those in primipara, but attended with more difficulty and risk; because, as a rule, the milk flow sets in sooner after delivery, and more abundantly than in first cases, hence we have to take repressive measures sooner. Repeated pregnancies also tend to increase the size of the womb, and in consequence a larger quantity of blood is sent to the breast when the great change coincident with lactation commences in the uterus. I think we may take it as a clinical fact, that the more often we have to take measures for milk repression, the more critical are the *results* of those measures likely to be, and the more apt to be followed by

some of the adverse *sequelæ* of parturition. We also often get in these cases great hypertrophy of the breasts, and we have to relieve them as well as the system and resort to drawing, which, as you may remember, we do not wish to do in primapara, and slinging becomes increasingly important here.

With respect to the second, multipara who intend to suckle, we often have to encounter difficulties from antecedent breast damage or even disease itself, and we have to repress the milk flow in one breast and encourage it in the other. Again, we often get swelling of the axillary glands, and sometimes of the lymphatics of the under part of the upper arm.

In multipara, instead of mere engorgement, with tenderness, we sometimes get a sort of nodulated condition of the mammary glands, so that the breast almost reminds one of a bag of marbles. I have found active friction *lightly* applied, with some stimulating lubricant, such as hartshorn and oil, very serviceable in these cases, and have often rubbed a "knotty" breast smooth with this simple remedy. Slings are not always required here, as there is not much enlargement in the volume of the breast. For swelling of the axillary glands near either breast, I have found warm fomentations and some belladonna ointment smeared over a piece of soft rag (but *no* rubbing), and placed over the swelling, soothing and effectual. For medicinal measures we generally resort to saline purges.

We get nipple troubles too often the result of neglect and mismanagement in previous confinements; and in some instances the mischief is so serious that one breast will be quite disabled through it, and the patient has only the other to suckle with. Then we have the enlarged nipple, fleshy and spread out. It is too large for the infant's mouth, puts his jaws on the stretch, and renders the act of sucking impossible. This defect may affect *both* nipples, and it gets worse with repeated pregnancies. The evil is greatly aggravated, if not very often brought about, by injudicious attempts at "nipple moulding" in previous confinements, by placing the infant to an unprotected nipple, and letting him do his worst with it, the milk secretion at the same time being scanty; and this continued irritation from the

infant's mouth injures the nipple, and hence lactation has at last to be abandoned. At the same time this form of nipple defect may be due to natural causes.

The Wandsbrough Metallic Nipple Shields may be of some use to the patient in these cases, but they are none to the infant, and at this point I will first describe them to my young nursing readers who may not be familiar with them.

These shields are ugly things, circular in shape, about two inches in diameter, with a depression in the centre for the nipple; they are turned up round the edge of the rim. They are hard and non-porous, and apt for that reason to make a sensitive nipple hot and tender. They are most useful in pregnancy, when they can be kept in position by the corsets. In addition to their physical *charms*, these shields are credited with chemical virtues as well, on these grounds—the metallic plates are made of zinc, and the lactic acid of the milk acting upon them forms a sort of rust or oxide of zinc, the active principle of the dressing ointment so familiar to every nurse. The value of the Wandsbrough shield, then, is as the value of oxide of zinc, for the nipples can be protected from abrasion by more comfortable appliances than metal capsules. In earlier days, when our therapeutical resources were more limited than they are now, zinc ointment was used in obstetric nursing for sore nipples and in other ways until the present time, when we have other preparations more suitable for our patients. Nipple troubles arise from the irritation of the child's mouth and gums in sucking; and if we had no suckling we should have no tender nipples; and I have pointed out to you the simple measures by which we prevent or alleviate this distress. It is very often aggravated by the mother persisting in nursing when she has not a sufficient supply of milk for the child, and he injures and "munches" the nipple in his unavailing efforts to get his food. Partial weaning is the best remedy here, giving the infant food, say, during the day, and the breast at night. Sometimes the nipples get so damaged by suckling that we have to resort to escharotics to heal them, and paint them with lunar caustic. If nursing is still persisted in, a shield must be used; but in these cases complete weaning is the safest plan.

I have now gone through the various troubles of lactation, and endeavoured to show what are the best means for avoiding disaster. But, for all this, we must be prepared to accept defeat, and face the breast abscess, that is one of the most distressing misfortunes of child-bed. But even in these cases we must do our best to *try* and avert the formation of pus by aiding absorption and milk dispersion. When we find localised *hardness*, redness, swelling, and pain, we know that trouble looms in the distance, and we must at once resort to heat and moisture, but not *forcing* applications, and I find a bran stupe to begin with very useful, prepared in this wise:—Take a strip of *new* flannel, from twelve to fourteen inches wide, and long enough to go round the circumference of the breast. Fold it in half, and make a sort of bag of it (not unlike in shape an old-fashioned pudding bag), by sewing it up longwise and at one end; turn the seams down *double*, leaving the edges raw, and putting the stitches as close to the edge of the hem as you can, so as to prevent the bran from coming out at the seams. Fill to about *two-thirds* of its length with clean, fresh bran, and sew up the open end in the same way as the others.

Have ready a kettle of boiling water, place the bran bag in the bottom of a basin, or small foot pan, and put over it enough *boiling* water to completely cover and saturate it. Let it remain in the water for about ten minutes. Have ready a Turkish towel—an old one will do. Pick up the bran bag with a spoon, or piece of stick, from the hot water, and at once put it *longwise* in the towel; get some one to take one end of the towel, whilst you take the other, and both together wring the stupe as dry as you possibly can; take hold of it at both ends with a towel to protect your fingers from the heat, and shake the hot bran about to make it even in the bag, so as to have no more at one end than another. Now take the stupe in a dry towel or napkin to the bedside for application. Slip off the night-dress to the waist, and place the stupe all *round* the breast as hot as it can be borne. Remember, neither stupe fomentations nor poultices are to be placed *over* the nipple or areola. Have a sling handy, like those I have described to you to fasten on the stupe.

To soothe pain I often advise equal parts of belladonna ointment and glycerine, mixed well up together (say half-ounce of each), and a portion smeared all over the breast *very* gently comforting before you apply the stupe.

Have the dressing and the sling ready before you prepare your stupe, which you now have to fix in position with the sling, and in the manner I have so recently pointed out to you. Fasten the two ends of the bran bag together over the *top* of the breast with two strong safety pins as tightly as the patient can bear it. Over all place some folds of flannel, slip on the night-dress, put the patient rather high up, but comfortable, on her pillows. If prepared in the way I have told you these bran stupes can be steeped in a decoction of poppy heads if necessary, they retain the heat for a long time. Of course you always have a second ready for renewal without any delay. Sometimes we use hops for stupes, but there is nothing to my knowledge that retains heat longer than bran, and I think it has a healsome influence with it as well. These palliatives may happily lead to absorption, and arrest the formation of pus. If it comes to abscess other measures will have to be used, such as forcing poultices, &c., and then we get into very distressful troubles, and it becomes a surgical case, and happy is the woman who falls into skilful hands. You will have to follow all your medical directions, but this is not the place to enter into surgical details.

There is one point that I think is now generally agreed to by most accoucheurs, that, *when* inevitable, the lancing should not be too long delayed. The sooner, consistently with other conditions, the pus is liberated the better for the patient; it does not do to trust too long for the abscess to break. Some patients resist surgical aid to the very last. As a nurse it is your duty in every way to support the opinion of the doctor on this point, for her siding with the patient has led to *serious* loss of time. Use all your powers of persuasion with gentlest tact to induce the lady to submit sooner rather than later to lancing.

We have been so long occupied in discussing the topical measures necessary in breast treatment, that we have had no time for other nursing duties connected with lactation. We shall have to retrace our steps, and take up our duties from about the fourth day from delivery.

What are the symptoms that we notice in lactation? Shivering, thirst, headache, and general *malaise*. The patient does not feel so well as she did at first. There may be a rise in the pulse; possibly a slight rise in the temperature. These symptoms again vary very much in character and intensity. Speaking generally, we may say that the sooner the milk flow sets in after delivery the more favourable are the general conditions of lactation and the slighter the constitutional disturbance it occasions.

Let us take the symptoms in the order we have enumerated them.

1. Shivering. This may be merely a chilliness on the surface of the skin—a “milk shiver”; sometimes so severe as to almost approach to a rigor, and yet not be followed by any of the bad symptoms we associate with ordinary rigors. Why is this? The answer to my mind involves a point of much interest in Obstetric Nursing; and I call your attention to it in order to save you anxiety, and prevent your taking measures that are not required in these cases. What is the cause of rigor? A subtraction of heat from the surface of the skin, leading to chilliness; and a determination of blood to some internal organ of the body, leading to pathological conditions such as congestion, inflammation, and so on; and we all know, from the experience of daily life, that “shivering” is followed by bad results of some sort, though they may be no more than merely a sore throat or a common cold. In lactation we also get a determination of blood to the breast, not leading to bad, but good results, followed by the lacteal secretion and a copious flow of milk—are all troubles from “chilliness.” These “chills” more frequently come on at night. Your first care must be to excite the action of the skin, and induce gentle perspiration. To do this you are *not* to heap bedclothes over your patient, as is so often done, but wrap up the lower extremities and *abdomen* in a small blanket, or flannels made hot and placed *next the skin*. You will have to unfasten the binder for this purpose. Place a woollen shawl over the shoulders, but do not oppress the breasts with weight or make them too hot. If the feet are cold put a foot-warmer in the bed. Give the patient a cup of hot milk; or, if you have it ready, chicken broth or beef

tea, or a cup of tea (half milk). I do not advise stimulants in these cases. By these measures you will set up warmth and moisture on the skin, and in due time the milk will come into the breasts. Say the flow sets in in the early morning, it will be wiser not to strip the patient on that day to wash her or change the night-dress, the skin being sensitive to chill from perspiration. You can use the bed-bath with carefulness, but no bed-making, nor anything that tends to fatigue or disturb your patient. Keep her quiet; any kind of excitement is to be avoided at this period. As I observed before, there is a tendency to headache and sometimes depression, and a little feverishness attending the onset of lactation. Thirst is also one of its concomitants.

I have pointed out to you the simple drinks suited to convalescence. Here you will find the acidulated barley water, taken in *small* quantities at a time, serviceable and refreshing, made *thin*. When the flow of milk is excessive we have to limit the amount of fluid given, and sometimes medicinal remedies have to be resorted to to diminish the tension of the breast; and these salines again give rise to thirst, which we must not assuage by fluids, but semi-fluids, such as fruit jellies (red and black currant) to moisten the mouth, day or night, in teaspoonfuls, or *fresh* lemon-juice in soda-water, and in *small quantities* as regards the latter. I consider calves'-foot jelly very acceptable here; it contains a certain amount of nourishment, allays thirst, and can be taken at any time.

And here I must digress to give a few words of advice to my lay readers (if I have any), that unless they employ a *chef*, to get this useful invalid aliment from a first-class confectioner—fresh and fresh, as it is wanted. I am quite aware that calves'-foot jelly can be made (on paper) in any quantity, and, of *course*, superlative *quality*, at home; but a somewhat wide and *dismal* experience leads me to the conclusion that nothing is more uncertain than the *results* of the household jelly-bag, one of its amiable characteristics being an unwillingness to part with the jelly when we most want it! I also advise you to eschew the substitutes of commerce; for whether prepared in bottles (about the worst), plates, tins, or skins, I have a deep-rooted idea (it may be prejudice—we women are all wilful) that they are innocent of the feet

of calves. These productions may do for parties or picnics, but we Obstetric Nurses cannot recommend them for *our* patients. Calves'-foot jelly is nice given warm. Take a teacupful of it, place it on the hob to melt, or in a basin of hot water. You can add half a glass of the *best* sherry, a little fresh lemon-juice, and white sugar, if required. This, with a sponge cake or water biscuit, is a pleasant form of light refreshment when we do not want too much fluid, and it is a change from the solid form. Drinks should not be given too hot. At this time (commencing lactation) they give rise to perspiration, and consequent risk of chilling afterwards. Cold custard is a nice form of drink ; but it should be home-made, and well made, not forgetting the cream—no custard powder delusions ! I do not mean *cooked* custard, baked or boiled, but custard that can be sipped from a cup or taken through a feeding-tube.

At times there is a disagreeable taste in the mouth, due, perhaps, to milk feverishness, and I have found the following simple lotion and gargle give relief and cleanse the mouth and throat—namely, one drachm purified borax, one teaspoonful castor sugar, half-pint of *boiling* water ; stir well up together, and let it stand till cold. Take half-a-tumbler of the solution, and add just enough boiling water to make it tepid, and let the patient rinse out her mouth and gargle her throat with it night and morning as long as necessary.

At this period we have to alter the position of our patient from recumbent to semi-recumbent, and she will have to sit up in bed the best part of the day. Now, a great deal goes as to how you arrange this matter as regards the comfort of your patient. You have two ends to consider : to support the shoulders, and give a *resting* point for the elbows, an important point when the breasts are full and heavy, and one apt to be overlooked by nurses.

Let us assume that it is the second day from lactation, and that you have to wash and change your patient. And here let me remind you that the breasts must be carefully washed all over *every* morning with warm soap and water, using a piece of soft flannel for the purpose. I deprecate sponges, *except* for face washing. I like "Boraxiline" (a sort of dry soap, delicately perfumed, prepared by the Patent Borax Company, Birmingham) added to the water.

A tablespoonful to a full basin of water cleanses and softens the skin. The breasts must be wiped perfectly dry with a soft towel, and then powdered. In doing all these things, remember the instructions I gave as to breast handling. Use the *palms* of your hands, supporting the breast in one hand whilst you wash with the other. There must be no "prodding" with your fingers; a clumsy nurse is no comfort to her patient.

You now have to place her into a comfortable position on her pillows. How are you going to do this? By piling them one on the top of the other, so that your patient slips down in the bed almost at once? To avoid this mistake you must proceed in this wise—viz., draw the bolster well forward on to the bed, place the first pillow a few inches from the edge of it, the second pillow a few inches from the edge of the first (in a sort of step-like arrangement), the third pillow being placed in the same manner as the second; by this means you get support to the back by pillow No. 1, rest for the elbows by pillow No. 2, and for the shoulders by the third. Sometimes we take a small pillow, or cushion, and place it across the top of the third pillow, to give support to the neck. By these arrangements the comfort of your patient is fairly secured. In addition we shall require a reading-easel, attached to a small table. It can be placed just where it is wanted. This does for her book or paper, and to stand a cup, plate, glass, work basket, &c., on.

I have called your attention to the advantage of having the lady's bedstead back to the window, so as to give her a good light for reading or writing when well enough to do so, and you now see the benefit of it.

We must now take into consideration solid, as well as fluid nourishment, for we shall have to make an alteration in the diet of our patient as soon as lactation fairly sets in, and broths and milk-gruel must be supplemented by more substantial viands. We will assume that it is the seventh day from delivery, that the bowels have been sufficiently relieved, that the milk flow is normal, the breasts soft, the patient's appetite good. The large intestine requires the support of solid food, as when empty, air is apt to accumulate in it, giving rise to flatus and "colicky" pains. What is our best

palliative? The question of solid aliment is an important one. Remember our patient is still in bed, and in a recumbent or semi-recumbent position, which favours constipation.

We have three substances to choose from in addition to bread—fish, flesh, and fowl. In my judgment the first is especially useful, as it neither heats the blood nor affects the kidneys in the way that meat taken in quantity is apt to do; and I am glad to say that fish is now much more largely used in our portion of nursing work than in former years. What fish shall we choose? Much must depend upon the season of the year, for I need scarcely remind you that fish is most wholesome when in best season. Cod and oysters, for instance, are both good for our patients, but we cannot get them in July. With respect to the latter, they can be taken cooked or uncooked with great benefit by women who like them. They are more nutritious eaten raw, and make a nice lunch, with some brown bread and butter. What is the best to drink with them? You do not want much, but I recommend a glass of Chablis as about the best and most wholesome. A simple way to cook oysters for those of our patients who cannot eat them uncooked is the following: Have a dozen of natives freshly opened at home, beard them, strain off the liquor that comes from them, and mix it with equal parts of cream or milk; thicken it with flour, into which you have rubbed a little fresh butter; then put the mixture into a perfectly clean black-tin saucepan and let it come to a boil, stirring the while: add a pinch of white pepper; then put in the oysters, lightly floured, but do *not* let them boil, or you will spoil them and make them “leathery” and indigestible; they only require to be warmed through. Some people like spice to this stew, but to my mind it spoils the delicate flavour of the oyster, and is not suited to a sensitive stomach. This preparation comes in well for lunch or supper any time during convalescence, taken with bread and the wine I mentioned, or sherry if preferred.

Cod (in season) soles, whiting, smelts, grey mullet (in the summer) are all suitable. Many practitioners recommend plaice as being good for lying-in women to eat (boiled in preference to fried), and some allow skate; but I think you

will find the fish I first mentioned about the best and most liked. If the lady is to have fish for her dinner, I should give her a cup of beef-tea or chicken-broth for lunch, and a farinaceous pudding or porridge for supper. Keep to cocoa for breakfast as a beverage; the less tea that is taken at this period of lactation the better, and afternoon the best time to take it. For flesh food, the white meat of fowls is the most delicate, roast or boiled, preferably the former, which should be served with bread-sauce, as at this time vegetables are not altogether prudent eating. Mutton is the lightest meat, roast or boiled, especially the former. It should be cut from the saddle or middle of the leg, and plenty of gravy with it and some vegetables, such as potatoes, kidney or French beans, if fresh, and young cabbage, well cooked (this applies to all vegetables). We assume we have got well into our second week of convalescence, and all things are well.

There used to be a prejudice against giving suckling women vegetables, but I think that must be giving way to more common-sense views. What better for the blood than *fresh* vegetables of the simple sort? What nicer than spinach? I have recommended them to my patients for many years, and do not recollect any harm coming from them. Beef, that can be eaten later on, the under-cut of the sirloin being the tenderest and most full of gravy. Eat any vegetables you like best with it. I know it is said "babies" do not like vegetables, as they do not agree with them; but, as *they* have *not* told me so, I incline to the opinion that they are maligned?

All things being favourable at the beginning of the second week, the lady will be well enough to leave her bed (not her room), and recline for a few hours on her couch. This change will refresh her, especially if there is a copious milk supply, when the bed is heating, and I believe weakening. A nurse must be careful how all this is done. There must be no dressing for the first move—in the right direction, we hope! After the lady is washed and changed, a warm woollen petticoat must be put round her waist, woollen stockings on her feet, and slippers that have been warmed at the fire; a long wrapper (cashmere or flannel) put on instead of the bed-jacket. Have the couch brought close to the

bedside—longwise to it; cover it over with an Austrian blanket or travelling rug, that has been put to the fire for some time before it is wanted; place the pillows at the head of the couch in the manner I have just told you of. Get someone to help you lift the lady from the bed to the couch; at once cover her over with the rug, wrapping her feet well up; take the eiderdown coverlet, or another blanket, and place it over the rug if required; put a shawl over her shoulders and prop her up comfortably on the pillows. Wheel the couch to the fireplace, putting the patient's feet towards the fire and her back to the window; screen her face from the fire heat, as it may make her head ache. Bring the reading-easel or table close to the couch to be handy for her use. You can place on it a bottle of any perfume she likes, or smelling salts, and a fan (as she may feel a little faint at first), and one or two pocket-handkerchiefs. Of course, you will not get the lady up until she feels well enough and you have the doctor's sanction for the step. The best time for the move is between breakfast and dinner. As she may feel a little fatigued, it is as well for you to have some light refreshment handy, such as a cup of the warm calves'-foot jelly if the weather be cold, or cold if it be warm, or a sponge cake dipped into milk or sherry and water. Do not let her get over-faint by keeping her waiting for restoratives.

There is another point about this "first getting up" that I would impress upon your mind, and that is to take the temperature of the room beforehand. There should be a thermometer in every lying-in room. It is not otherwise than prudent for an Obstetric Nurse to have one of her own; they are very cheap, and as useful to her almost as her clinical one, which in our portion of work we keep in our pockets as long as we can, as our patients regard them with distrust. It leads them to think they are ill, which we never admit till we are obliged. The thermometer should be hung on the *outside* wall of the room near the window. A temperature of 68 degs. Fahr. should be maintained in the lying-in room day and night, regard being also paid to those ventilating measures I have pointed out to you. When the day temperature of the outside air is 70 degs. Fahr., keep the window partly open all day. This remark

also applies to the time of labour. Admit the outside air into the room until the birth of the child, day or night, if the temperature is over 68 degs. Fahr., and in our climate this can only be done during the summer months, and even then some of our patients will not allow us to keep the window open.

There is another consideration besides the temperature of the room that affects the well-doing of our patients—that is its aspect, an ideal exposure would be S.S.E., as by that we should gather all the precious beams of the winter, spring, and autumn sunshine, and not have too much in the summer; for after the meridian the sun would leave us behind him, and we should get none of his weltering beams, which in the summer solstice are very oppressive. How often do we get this exposure? The room may have a *due* north aspect, and have to depend upon artificial aid to keep it warm, and we should not get the gladsome sunshine to help us on; and in the spring or autumn we might have to defer the “getting up” for a day or two, as the absence of sun warmth might make our patient more apt to feel “chilly” after leaving her bed for the first time. It is always more favourable to have the lady’s bedroom in a sunny aspect; but, of course, we must accept circumstances, and adapt ourselves to them. Every nurse knows how much sunshine aids convalescence, and should bear that fact in mind if she has any voice in the choice of the bedroom.

In addition to temperature and aspect, there is weather to be thought about. If the day is wet, especially in spring or autumn, we had better defer the much-longed-for getting up till the rain holds up. Again, if in the winter, and the falling thermometer outside the house shows that a sharp frost has set in, we must keep the lady in bed for a little longer than usual, to avoid giving her a “cold” at first starting on our homeward-bound voyage to “Port Recovery.”

We must now retrace our steps a little. When you have comfortably positioned your patient, you must attend to the bed, and get the servants to help you make it, turn the bedding, and so on. It is a good plan to arrange to put on the clean sheets for this occasion. When you have had the bed made, turn the bedclothes back longwise from top to bottom, leaving the right side open, and ready to put the

lady back into bed as soon as she feels in the least tired. Have a clean absorbent sheet, or draw-sheet, placed ready. It is a good plan to have a piece of absorbent sheeting on the couch when you move your patient on to it. It is as well for her to sit up to her dinner. She may possibly fall asleep on her couch soon after, in which case do not wake her up to get into bed, but cover her where she is. See that she is covered up and protected from draughts from open doors, and, if you can, from intruders, who will come abruptly into the room, wake her up, and set her head aching. In order to protect her patients from intrusion, when repose or privacy were required, one of my nurses hit upon a plan that found much favour in exalted circles, and holds good throughout the whole social scale. (And here I do not hesitate to say that the more illustrious the rank of your patients the more do you find them obedient and more winsome generally to have anything to do with.) It was simply this: nurse went to a ticket-writer, and had two placards, on which were written in large letters, "Asleep!" and "Engaged!" respectively; and one or other of these tickets, as occasion required, was fastened to the *outside* handle of the bedroom door with a piece of ribbon. In the well-ordered households of the great those words were law; and in a quiet way nurse became mistress of the situation, and thoroughly safeguarded her patient from all intruders.

Our next step in advance will be getting the patient into another room for a few hours in the day. Let us assume that we have entered into the third week from delivery, and if all is going on favourably we may safely prepare for a move; but it must depend upon the fact that the sitting-room is on the same floor as the bedroom, so that the lady can be wheeled on her couch from one room to the other. The time for the "journey" will be as soon as the patient is up, washed and dressed. More underclothing will be put on than was required in the bedroom; but the loose warm wrapper will still be continued. The arrangements of the couch will be the same as usual; but instead of pillows we can use sofa cushions, and they must be warmed by the fire before placing them. There is another duty that must claim your attention—that is, to see that the sitting-room is prepared for the lady's reception. If there has not been a

fire in it for some time, it is better to have one lighted the day *before* the room is wanted, and have the window and door open to ventilate it. If there has been a fire in the room recently, it will be sufficient to have one *early* in the morning, to get the room warm. Also remember to raise the temperature of the air of the room up to 68 degs. Fahr., and do not take the patient into it until it is the same temperature as that of the bedroom.

When the patient has left her bedroom, the window, or windows, must be opened top and bottom, the bed made, and the carpet swept, fire-grate cleaned up, and everything made straight and tidy. When all these duties are done, have the bedclothes turned back from head to foot, so that the bed is well exposed to the fresh air. This holds good in town or country houses, weather permitting. Of course, a good fire must be kept up, and the room be shut up and got warm before the lady returns. She may be glad to come back to her room after she has had her dinner; and, if at all fatigued, it is better for her to go to bed at once than to get over-tired. The first time of leaving the room tries her strength, and it is not desirable for her to sit all day to begin with. As days go on, so does improvement; and the greater part of each day can be spent out of the bedroom.

And here I must remind you that the semi-recumbent position must be maintained for at least a month after delivery, and the patient recline on a couch in the daytime; and if you have a bed-table to place across it, she can read, write, work, and eat with comfort, without getting up. This is an important aid to convalescence that every mother should fully understand and observe.

About mid-convalescence, when our patient is well enough to leave her room, we are apt to get a "drawback" from visitors. The visitors in due time depart, and patient and nurse are alone. "My head *does* ache," says the former. Under these circumstances it is better for the patient to retire to rest at once, or she may become *seriously* fatigued by sitting up too long. Give her some *sustaining*, but *not stimulating* nourishment, such as a cup of strong beef-tea or chicken broth, and, if these are not obtainable, a basin of milk gruel (especially if she is nursing her

infant) as soon as she is in bed. She will most likely get some refreshing sleep ; but it is quite possible the patient may not feel well enough to leave her room on the following day, for *very* little things upset a sensitive lying-in woman ; hence all excitement should be avoided, pleasurable or otherwise.

We have now gone through the duties demanded during two out of the three periods into which I divided convalescence, viz., (1) from the Completion of Delivery to the Commencement of Lactation ; (2) Lactation. (3) The Lochial Period will form the subject of my next chapter, and, in a nursing point of view, will be of more interest than any that has preceded it, as we shall have to enter into some of the most critical and anxious conjunctures that fall within the range of Obstetric Nursing.

CHAPTER VII.

THE LOCHIAL PERIOD (DUTIES DURING).

THE LOCHIA—SEAT OF THE UTERINE SURFACES—CHARACTERISTIC CHANGES IN THE VAGINAL DISCHARGES—SIGNIFICANCE OF ANTISEPTIC VAGINAL DOUCHING — INTRA-UTERINE ANTISEPTIC INJECTIONS—MODE OF GIVING SAME — POST-PARTUM INFLAMMATIONS—RIGORS—TREATMENT OF, BY THE NURSE—FEVER DRINKS—FRUIT FOOD—MILK—HOW TO TEST IT—HOW TO PREPARE FOR THE PATIENT —THE PROPER CARE OF MILK—EGGS—VARIOUS METHODS OF PREPARING THEM, AND THEIR SPECIAL VALUE FOR OUR PATIENTS — STIMULANTS, DESCRIPTION OF — THE ADMINISTRATION OF, IN DIFFERENT CONDITIONS OF THE PUERPERAL STATE—CHANGE OF AIR AFTER CONFINEMENT —CONSIDERATIONS FOR SELECTING THE HEALTH RESORT.

I HAVE touched upon this subject of antiseptics, and pointed out the apparent inconsistency of an Obstetric Nurse being enjoined to use them in a non-infectious case, in itself fraught with no danger to the patient nor to others; hence I drew the inference that the evil was to be found in malignant influences from without.

As regards our patients, there are three media of infection to be feared for them, impure air, impure water, and the zymotics. There are three paths of attack: the respiratory the gastro-intestinal, and the utero-genital tracts; parturient women may die from broncho or pleuro-pneumonia, from exhaustion consequent on uncontrollable vomiting or diarrhoea, from the results of injuries, spontaneous or traumatic, to the genital tract, from the effects of zymotic infection, notably scarlatina or erysipelas; and any one of these disasters may befall them during the period of convalescence we are about to consider.

I have brought before your notice the methods we pursue to secure our patients from aerial contamination and water pollution; our task now is to diminish as far as possible the

risk of contagion to the utero-genital tract, a special and important duty of an Obstetric Nurse.

I must first direct your attention to the discharges that immediately follow the detachment and expulsion of the placenta, commonly called the lochia. At first they are purely sanguineous, mostly mixed or capillary blood, but at times almost arterial, and the flow so copious and rapid as to amount to post-partum hæmorrhage. This eruption of blood escapes from the bared uterine vessels at the placental site, and this fact may have led to its being compared to a stump after amputation, which, if not wholly correct, is to my mind not otherwise than a felicitous illustration.

All surgical nurses know that the surgeon arrests hæmorrhage from the severed blood-vessels by ligatures or the actual cautery, and sometimes styptics as well, and also that after every such operation there is a *risk* of secondary hæmorrhage more or less serious.

Now how does Nature deal with the exposed vessels at the placental site? I have alluded previously to this most interesting subject, and briefly pointed out how venous regurgitation is prevented, and the out-pouring of arterial blood arrested, by physiological means alone, due to the structural peculiarities of the arteries and veins of the gravid uterus. Nature neither "ties" nor "burns," and in addition to the means for arresting hæmorrhage just mentioned employs a tourniquet of marvellous force—the muscular contraction of the uterus. It is during the relaxations of this muscle that blood escapes from the uterine vessels, accumulates and coagulates in the cavity of the uterus, and gives rise to those painful and irregular contractions, known as "after-pains." The sanguineous character of the lochia may continue for two or three days after delivery, but in young and healthy mothers not more than twenty-four hours.

What are the next changes we notice in the lochia? A change in colour, a paling down, no longer arterial, a lessening in quantity, a difference in consistency, thickening, in character and dark in hue, and lastly, thin and serous, and a quantity of greenish foetid fluid flows from the vagina. These discharges mark successive and significant changes in the uterine cavity, and continue for about ten or twelve days, when the wound is healed, and the mucus

membrane is being gradually restored to its original character.

And let us say a word or two about this invisible and singular uterine wound. We cannot watch its healing as we could that of a stump or an ulcer; is it anything the less interesting on that account? Normally aseptic, as all surgical wounds are, how shall we keep it so? And if septic mischief is feared, how are we to render that uterine wound antiseptic? It is obvious we cannot treat it as we could an open surgical wound or surface. How then are we to protect it from evil influences from without? This is a point of great and special interest in Obstetric Nursing. Nature's chief remedy is the wonderful contraction that takes place in the whole genital tract immediately after delivery. This closing of the uterus and passages serves in a measure to protect them from harm.

The vagina is the channel through which the lochial discharges escape. It is also the channel by which infection is conveyed to the uterus, and hence we have to guard it from the invasion of the foe. In the first instance the duty of antiseptic precautions devolves upon the surgeon or midwife, and until recent years they used to end there; but it soon became apparent that these measures of manual disinfection must be steadfastly continued by the nurse for some ten or twelve days after delivery, to assure the safety of our patients by as far as possible keeping the uterus in an aseptic condition. There are two methods by which an Obstetric Nurse can keep her hands surgically clean, which we will call the *wet* and the *dry*. In the former she dips her hands to the wrists before performing any of her bedside duties in some antiseptic solution, that may be directed to be used by the accoucheur. Say she has to change the napkins. This must be done with wet hands, which is uncomfortable for the patient, and makes the top sheet damp, or they must be *wiped* first, which detracts from the efficacy of the antiseptic. For my own part I recommend the latter plan, *dry* disinfection for the hands, assuming that the antiseptic used is of a *non-poisonous* nature.

Let us assume that we are going to take a Condy course (there are few better), and to continue it all through. As regards the hands, we will take a one-pound tin of Condy's

powder, and have half of it crushed under a heavy rolling-pin on a piece of clean demy paper. We will then sift it through a piece of *new* book muslin, rather fine. We put the larger crystals on one side; they will do for other purposes. We put this *sifted* powder into a canister by itself. We now take a portion of it (three or four ounces) and tie it up in a piece of clean book muslin *that has been washed* to thicken it (remember this), and make a dust-bag for our hands. Having reduced our Condyl's powder to a state of fine division by our *first* sifting, we make it still finer by our second.

Before performing any of her bed-side duties that involves approaching the genitals, nurse should wash her hands in warm soap and water, and brush her nails—which, by the way, should be kept short—and then wipe her hands perfectly dry on a Turkish towel. That done, she takes her dust bag, and smothers her hands all over with the finely-divided disinfecting powder. Before applying fresh napkins or absorbent pads, disinfect them by dusting some of the powder over the surface that goes next to the vulva. Before passing the bed-slipper put some Condyl's powder (unsifted)—about a teaspoonful—into it (not more), and do this every time it is used. When any of these bed-side duties are done, rinse your hands in warm water, and you can judge from its hue what—if any—septic mischief is to be feared. By this method of manual disinfection we can protect the vulva and external genitals from the risk of infection. We must now consider in what way the vagina and uterus can be guarded. For the former the vaginal douche is the most commonly ordered. I have not a high opinion of it myself, though it is recommended by accoucheurs of the highest standing; for the latter an intra-uterine antiseptic injection, given by surgeons or midwives under certain grave conditions. Of this I entertain the highest opinion, for by this means alone can we render the uterine wound antiseptic when it becomes necessary to do so. In order to place before you the relative value of these two methods, let me give you a rough and ready illustration. Supposing a patient had an open wound or ulcer on the leg, would it do any good to bathe his foot with an antiseptic solution?

We can protect the vulva and external genitals by manual

disinfection, and external bathing with antiseptic solutions, using for that purpose a soft mop, in preference to sponges or flannels. With respect to vaginal douching *as* an antiseptic precaution, it has often occurred to my mind we might be rather diffusing than arresting septic evil by its use.

Intra-uterine injections are used in Obstetric Nursing for administering antiseptics or hæmostatics; and as it is necessary that you should know all about them, we will enter into the subject, and begin with antiseptics and consider hæmostatics further on. The operation is usually placed in the hands of surgeons or midwives, not from any particular difficulty about it, but because to do it effectually and safely requires a certain amount of tactile skill only acquired in midwifery practice. It matters little *what* antiseptic we use, for the *modus operandi* is the same in all cases; but as a matter of choice we will decline the corrosive sublimate. It is better to use a *new* syringe or one kept for the purpose, and not that used by the nurse for all purposes; and our first duty will be to prepare a solution of *double* the strength we intend to inject—say, *two* drachms of Condyl's fluid to the pint of water; and we shall require a quart in which to immerse our syringe and vaginal tube for some ten or fifteen minutes before using them. We then fix the vaginal tip firmly on to the nozzle of the syringe, and, charging it, pass a stream of the solution through it to assure ourselves it is in perfect working order and *no leaks*. We then prepare the solution we intend to inject; we shall mix a great deal more than we intend to use—say, a quart or even three pints to a strength of one drachm of Condyl's fluid to each pint of warm water; or if carbolic acid, to a strength of one in forty. You again charge your syringe, and, placing it under the second prepared solution, have it brought to the bed-side for use. We now have to prepare the bed and position the patient. Place a piece of waterproof sheeting about the middle of the *right* side of the bed, and let it hang well over the side, as near the floor as possible, on which put a piece of old blanket or sheeting, &c., and stand a basin on it to catch the fluid as it runs from the vagina, which in this case we do *not* re-inject, as you do in vaginal douching. The patient must be gently placed *across* the bed (the bed-clothes

being turned back longwise) and on her *left* side, her head resting on a pillow; the nates must be brought close to the edge of the bed, and the knees drawn up; under the former put a clean warm napkin, and keep the patient covered over with a woollen shawl or small blanket.

The operator (?) approaches the bed-side, bares the *left* arm to the elbow, the right to a little above the wrist; both hands are powdered with the permanganate of potash in a way I told you of in a previous chapter, having been previously washed in warm soap and water, rinsed and dipped into the *first* solution for a few seconds, and then wiped dry. Nurse stands in front of the operator and holds the basin in position, so that the brim is on a line with the vaginal orifice. Having the syringe charged and the vaginal tube bent into a slight curve, as a preliminary step, we wash out the vagina; and then, re-charging the syringe, we pass the two fore-fingers of our *left* hand up to the mouth of the os uteri, and with the *right* hand pass the vaginal tube over them and into the uterus, up to the *fundus*, the antiseptic solution is *gently* injected, and the uterine surfaces irrigated, as it were. We watch the returning stream flow from the vagina and over the waterproof sheeting with great interest, and note its altered hue; usually it is ominously brown. Again we inject; the fluid may return to us less discoloured; we repeat the process, and may be rewarded by seeing our solution come back almost as purple as it went in, and we desist from further efforts. The vaginal tube is withdrawn, and with the enema at once dropped into the basin nurse has been holding, and left under the solution until we have time to attend to it, the operator here rinsing his hands in it before washing them.

Our next care is to replace our patient. The waterproof sheeting and wet napkins are removed, and a clean draw-sheet put under her instead, and a clean, warm napkin to the vulva. The shawl is taken off and the patient placed on her back, and as near to the edge of the bed as she can be with comfort, and a shawl or small blanket placed over her. In order to facilitate the escape of the fluid from the uterus, we raise the shoulders slightly on the pillows. The patient will require fluid nourishment, as soon as she is put into bed, through a feeder or feeding-tube. It has been frequently

urged against intra-uterine injections, that they are hazardous on account of the risk there is, that some of the fluid may find its way through the Fallopian tube into the peritoneum, and so excite inflammation. Of course there is a possibility of this disaster, but as we only resort to intra-uterine injections, whether antiseptic or hæmostatic, in grave conjunctures, I think we may very fairly balance the *good* we know they do, against the evil that may possibly, though remotely accrue from their use. Hence I brought this important part of midwifery nursing before the notice of my readers, and explained to them *why* we do it, and *how*.

When the patient is placed in bed, the protecting carpet or drugget must be removed, and the waterproof sheeting protecting the bed, must be taken away, washed all over with an antiseptic solution, and if possible put out into the open air for some time. The enema must also be rinsed in the strong solution we prepared for it, to begin with, running it through the syringe and vaginal tube, washed in plain water, running that through also, drained, taken to pieces and wiped dry. In order to protect it from the air keep it in a large waterproof sponge bag.

At this period, and under the condition just described you can resort to antiseptic spraying to refresh the air of the room, pinol is sometimes used, but to my mind Rimmel's toilet vinegar is quite as good. But here I must reiterate that antiseptics are no substitutes for *fresh air*—which means thorough ventilation of the apartment.

Before leaving the subject of antiseptics, let me direct your attention to their relative value in Obstetric, Surgical, and Medical Nursing respectively, and to show you how the object of their use differs in the two former from the latter.

In surgery, as in midwifery, we have to *protect* our patients from evil influences *from without*, and on almost parallel lines—namely, we have a *wound* to keep aseptic if possible, or render antiseptic if necessary. To do this we have in each case to destroy certain microscopic organisms and germs, with high-sounding names, but all *bad* alike, as tending to destructive tissue changes. In midwifery we have to fear the zymotic poisons for our patient, that would not affect in the same manner surgical wounds. We also

have to meet another danger. I have said repeatedly that the puerperal state is *not infectious* to others; nor is it; but in enteric disease there is very great risk of *contagion* to those attending parturient women suffering from it, and again these last may be infected by surgeons, midwives, or nurses, unless the most stringent antiseptic manual precautions are adopted in all instances where the evil is suspected or exists.

Now, in Medical Nursing a nurse has at *once* to prevent the spread of infectious diseases *to others*. There is but little to be done to *protect* the patient; he has the disease already; and whilst a medical nurse takes every measure to check the risk of infection for others or herself, she has not the prophylactic resources as regards her patient that an Obstetric Nurse has, and in leaving this subject of antiseptics and their use, I commend this distinction to your thoughtful consideration.

The next point to which I must direct your attention are the *post-partum* changes that take place in the uterus during this period of convalescence; in order that the nurse may note these points, which she has such abundant opportunity of doing, for in this way she can render intelligent and important aid to the accoucheur, who has not always the same advantage as regards the patient. The first cause of anxiety after delivery is the amount of muscular contraction in the uterus; it should harden under pressure, and feel firm, equable, and almost globular in shape. These primary contractions are intermittent in character, and relax at intervals to admit of the escape of blood or coagula that may have accumulated in the uterus, and give rise to those "after-pains" I have described to you. You will next note the gradual diminution in size that takes place after delivery; as the uterus lessens, it descends towards the pelvis, in the direction of the right iliac fossa, and with this decreasing bulk the sanguineous discharge from the uterus disappears and the risk of hæmorrhage with it. These successive changes in the external form of the uterus mark equally important changes in the lochia, and these discharges again the alterations that are taking place in the lining membrane of the uterus and at the placental site. What are the deviations from these normal conditions that should occasion

anxiety on the part of the nurse, and lead her to draw the attention of the medical attendant to them? To begin with: if instead of the alternate contractions and relaxations, with a tendency towards relaxation, the uterus not feeling firm in the intervals, but *flabby*, and not hardening under well directed pressure, but remaining large and "doughy," with copious discharges of blood and coagula, and this after twenty-four hours of delivery, you may feel sure that the safety of the patient is being imperilled, and that you should report the state of things at once to the doctor; or, again, the uterus may feel firm and be diminishing in size, but if two or three days after delivery you find the lochia bright in hue and *arterial* in character, you also report it, as this condition may be due to laceration of the cervix, or to something in the cavity of the uterus, preventing the closing of the uterine vessels, and hence you find *persistent* hæmorrhagic symptoms. Alterations in the lochial discharges have to be observed. After the grumous condition and *dark* hue that marks the *second* change, you find the lochia persistent and offensive, you may infer that some inflammatory mischief is going on in the os uteri or vagina, and this condition should be reported to the medical attendant. Again, the greenish fluid that generally marks the termination of the lochial condition may be unusually abundant and fetid, and give rise to a feeling of pain *in* the cavity of the uterus, and this should also be mentioned to the doctor. It is at this period (the lochial) that the utmost cleanliness must be observed as to draw sheets, bed and body linen, external antiseptic bathing of the genitals. The vaginal douching will depend upon medical direction. For my part, I think we may have too much of it, and are apt to spread, rather than stay, septic mischief; but a nurse must carry out her instructions.

In the second week after delivery, the most rapid diminution in weight is taking place in the uterus, and marks those remarkable interstitial changes that are taking place in the muscular tissue of the uterus, and upon which the great phenomena of its involution depends, and this again marks the *recovery* from parturition. It is the most critical, the most anxious, the most fateful period of convalescence, for, speaking generally, it is in the second week after delivery

that the bad results of neglect, mismanagement, and misfortune come to light.

We have dwelt upon the septic risks of child-birth; we will now touch upon some of the post-partum inflammations, due to other and various causes. The most frequent form is peritonitis, the result of inflammation of the womb, extending to the peritoneum. Inflammation of the uterus may be due to difficult and protracted labour; to reaction from the refrigerating measures taken in post-partum hæmorrhage; to overheating and exposure to draughts of cold air, leading to chills; to traumatic or spontaneous injuries; to improper food; to neglect or mismanagement at the time of labour. It is important that an Obstetric Nurse should understand and hence be able to observe intelligently the symptoms that mark the difference between inflammation of the uterus and "after pains." These last set in almost immediately after delivery; they are intermittent, recurring at uncertain intervals, and lasting for uncertain periods. If you place your hand on the uterus during one of these post-partum contractions, you will feel it hardening whilst they last, and softening when the muscle relaxes, and the "pains" are followed by discharges from the uterus of blood or coagula. They are often accompanied by profuse perspiration, but no other general symptoms, no rise in temperature or pulse, no coated tongue. The "after pains" diminish when lactation begins, and disappears when it is established.

There is another and rarer form of post-partum uterine pain that gives rise to great suffering after delivery, and differs from "after pains" or inflammation, and requires different treatment, hence I will briefly call your attention to it as neuralgic pains of the uterus; they often exist during pregnancy, and delicate, nervous patients are most prone to them. These neuralgic pains may be distinguished from inflammation by the natural feel of the abdomen, which is soft and free from pain, by the size of the uterus, which is very little increased, and feels unusually firm under the hand, and is exceedingly painful when pressed upon. The remedies are chiefly medicinal, opium, morphia, and anti-pyrin being used. *Dry* warmth, such as wadding made hot and placed over the uterus, is comforting; but a binder

cannot be borne in the least tight, but it may be used to keep the wadding in its place. Sometimes a flannel binder, instead of wadding, is good. Sustaining food, care and quietude, are essential. In some instances lactation has to be abandoned, as suckling adds to the uterine pain. This distressing condition is not dangerous, and may be regarded rather as a coincidence than a consequence of child-birth.

We will not enter into any detailed account of post-partum inflammation of the uterus, but just bring before your notice those premonitory symptoms that as an Obstetric Nurse you will have to observe and report to your medical chief. And here let me remind you that the uterus being at this time an abdominal organ, there is a grave risk of the inflammation extending to the peritoneum; hence we get puerperal peritonitis, which is a very serious form of child-bed fever.

Attacks of puerperal inflammations come on most unexpectedly and with extraordinary severity. Hence the supreme necessity for vigilant observation and prompt action on the part of the nurse in the *first instance*. Like all other inflammations, they are preceded by a rigor, and in Obstetric Nursing we may feel almost sure that either the breasts or the womb will be the seat of the invasion. I have told you that "shivering" often precedes a determination of blood to the breasts, which is physiological, followed and relieved by the lacteal secretion. Determination of blood to the uterus (congestion) is a pathological condition, tending to disease. The "rigor" that precedes inflammation of the uterus generally comes on at night or early morning, when the vital powers are at a low ebb, and after the third and before the seventh day from delivery, and the more severe the rigor and the more intense the nervous depression, often amounting to a sense of *fear*, that accompanies it, the more severe will be the feverish reaction and *pain* that follows it. The pallid cheeks, the livid lip, the chattering teeth, the convulsive movements of the extremities, particularly the arms and hands, the deathly cold, are some of the outward signs of the severity of the nervous shock the system sustains by the attack.

A nurse should always have a fire in her bedroom at night,

and before retiring to rest see that there is a plentiful supply of fuel and water brought up to the room. You will now see the advantage of this plan. We will assume that the rigor comes on unexpectedly at three a.m.; your first care will be to excite the action of the skin, and set up surface warmth. Fill up the kettle and put it on the fire to boil: you will want hot water for several purposes *as soon as possible*. Make some flannels *hot* and place them over the abdomen and next the skin. Get a woollen shawl or small blanket; make it hot and wrap the patient up in it from head to foot. Make a cup of drink, preferably *milk* made *hot* with boiling water, and a tablespoonful of brandy added: but I do not recommend stimulants to be given recklessly in these cases—better none at all than too much, as they are apt to increase the feverish reaction that will follow the attack. I have found the diffusive stimulants useful here; two drachms Sp. Ammon. Aromat. (Sal vol.); two ounces camphor water, add half this mixture to two ounces of *warm* water—to make *one* dose—repeated in two or three hours, will often restore surface warmth, and is perfectly safe as an *ad interim* measure. Your next step is to put the foot warmer to the feet, wrapping it up in flannel before doing so. The fire must be made up in the lady's bed-room, and the temperature raised to sixty-eight degrees or even seventy degrees. The coverlet or an extra blanket can be laid over the ordinary bed-clothes, but remember you must rely upon inside wraps more than *outside* ones, which are apt to oppress. Under the measures you have taken, the rigor passes off, and may be followed by profuse perspiration, which is so far a favourable sequel.

What are the next symptoms we may expect? Pain, inflammation, fever. And here I must digress to say a word or two about that pathological condition we call inflammation, and remind you that its dangers are intensified when the uterus is its seat during that changeful and critical period called the puerperal state. Hence I wish you to understand the object of the measures that have to be taken, to earnestly impress upon your minds the immense importance of prompt and intelligent action on the part of an Obstetric Nurse, without which medical skill may be nullified or seriously impeded.

If you refer to your text-books you will find inflammation described as redness, swelling, heat, and pain, but in the case we are now considering, which affects an unseen viscus, we have only pain and fever as objective symptoms to guide us. Let us briefly trace the stages and probable terminations of an inflammatory attack. Congestion or invasion, resolution, commonly called "dying away," inflammation, serous effusion, absorption, outpouring of plastic lymph, adhesions, suppuration, abscess, gangrene or necrosis of tissue, septicæmia, death.

An attack of inflammation of the uterus may come on with the utmost suddenness and severity. The seizure may occur in the middle of the night; note the hour, come on when it may. The pain is intense. What is your first duty? To apply *hot* applications to the uterus. Why? To favour resolution, to restore the capillary circulation by relieving the tension in the minute blood-vessels. To this end, heat and moisture are our chief agents. Remember that half the efficacy of remedial measures in these cases depends upon the *promptness* with which they are applied. Inflammation is a devouring flame. Our first effort is to try and put it out. It has been often said that a timely bucket of water might arrest a great conflagration. I know nothing better to begin with than bran stupes and turpentine. I always enjoin my pupil nurses to keep two bran bags ready for *instant* use, and half a pint of turpentine. You need not say anything about it to the lady, but a nurse who neglects to take prudent precautions to meet this probable and grave emergency of an attack of inflammation, fails in an important point of duty. The *longer* you have to *wait* for remedies, the less will be their power for good.

With respect to the bags, take a piece of flannel—rather fine, preferably new, as the oil with which it is dressed helps to retain the heat—ten inches long, and twenty wide, fold it in two, and run an inch hem all round the open sides, sewing it as near the outer edge as possible to keep the bran from coming out at the seams; before hemming down the open end of the bag, put it half full, not more (remember you are not making a pin-cushion), and you must leave room for the bran to swell and to be shaken about. You should have two of these bags made up in the

way I have described ; put them away and keep them clean and ready for use. I have told you how to prepare a bran stupe for the breast, but as these will have to be much more frequently renewed in cases of inflammation of the uterus, you will require wringers for them. What are wringers ? I will describe those we used in hospital, being as good as any I have seen out of it. They are simply two sticks about fourteen inches long, and about as thick as an ordinary broom handle, smaller in the middle than at the ends ; on each you securely sew a piece of towelling—I prefer Turkish, as it absorbs the wet more readily than anything else—twenty-four inches long and twelve wide. Have a basin of *boiling* water ready, into which put two tablespoonfuls of turpentine ; immerse one of the bran bags in it, and keep it there until thoroughly saturated ; lift it out of the hot water with a piece of stick or a spoon, or anything else handy, and place it on the wringer, and get someone to take one stick and you the other, and wring the wet out of the bag by squeezing it in the towelling until almost dry. You then apply it *over the uterus* ; remember this, for I have seen stupes placed aimlessly over the abdomen, and half their efficacy lost ; we require in the *first instance* to localise them over the uterus. Have ready a piece of flannel made hot by the fire, to place over the stupe, and over all the binder lightly pinned. You must be careful not to apply the stupe until the heat of it can be borne by the patient, nor must you renew it too often, for that kind of “fidgetting” does more harm than good. When you change the stupes, be careful to avoid chilling that portion of the skin made sensitive by the application of heat, and proceed in this wise : When bran bag No. 2 is ready, have a piece of dry flannel, getting hot at the fire, to place over it ; loosen the binder and slip the bran bag from *under* the piece of top flannel, which you leave *in situ* whilst you fetch the fresh stupe, put that under the flannel, which you then remove and replace by a fresh piece ; the wet flannel must be put to the fire at once to get dry and hot, ready for the next stupe. When placing the stupes, turn the bed-clothes back longwise, and do so with as little exposure as possible. The careless way in which stupes, poultices, fomentations, &c., are applied and changed, is one of the

many instances of *bad* nursing that degrade our portion of work. Some nurses sprinkle the turpentine *over* the bran bag after it has been wrung out, but I do not recommend the practice to *begin* with. We require counter-irritation of course, but, like a good many other things, it may be overdone, and unnecessary pain inflicted thereby. With respect to summoning medical aid in these cases, you must exercise a little discretion; as a rule, there is no *immediate* necessity for it if you follow promptly the directions I have just given to you. Say the attack comes on at three a.m., you need not despatch a messenger to the Doctor *at once*, but you must not fail to let him know in good time in the morning that his attendance is required before he goes anywhere else, and *write down* the reason why, and when the seizure occurred, &c.

In addition to topical applications, anodynes will be required, but these must be left in medical hands; for more harm than good comes of reckless medication whether by nurses or patients. These last, as many of us know, take narcotics hypodermically or otherwise upon their own responsibility, and often put strong pressure upon a nurse to administer them, but I strenuously advise her to resist it, for in *serious* cases medicinal remedies must not be tampered with, and in ordinary cases they are not required.

What is the next point we have to notice? We have had rigor and pain; we now notice a rise in the temperature and the pulse. I have intimated to you more than once, that in child-bed nursing we keep our clinical thermometer in our pockets as long as we can, but in this instance we shall have to bring it *en evidence*, and you will see as we go on that pulse, respiration, and temperature have all to be carefully noted; and a rise in temperature is always a cause of anxiety in our portion of work, because we know, under normal conditions, the pulse remains for some time slightly below par. Any nurse can take the temperature of a patient, just as any child can tell us the letters of a weather vane that mark the cardinal points of the compass; it is another thing to have a knowledge of the varied meteorological conditions involved in the *direction of the arrow*, and its thirty-two

deviations; and by analogy this is what I wish you to do, in order to understand the true significance of the readings of your clinical (arrow) thermometer, and we will just say a word or two on the subject of inflammation. If you refer to your text-books, you will find that the heat of the human body is maintained at an average temperature of 98 degs. under all conditions of climate, whether man inhabits the frigid, the torrid, or the temperate zone. This remarkable equilibrium is maintained by a compensatory action between the lungs and the skin. The heat of the body is generated by the interchange of gases that takes place in the air cells of the lungs; the carbon of the venous blood is decomposed into carbonic acid gas, by the oxygen of the air, and the oxygenated blood borne in the arterial current is the life of every tissue of the body. Nature generates more heat than she wants, and passes it off through the pores of the skin, in the form of cutaneous transpiration, and it is this conversion of heat that keeps the temperature of our bodies at its natural level.

The heat of the body in health is constant in spite of external influences; in the circulation it is not so, for being dependent upon the heart's action, it is modified by a number of circumstances that affect that organ, such as age, sex, stature, motion, the position of the body, the hour of the day, and the season of the year.

What is the pulse? An arterial throb due to the momentary distension and recoil of the coats of an artery; and in medical practice the left radial artery is selected to be felt, which you do by placing the bulb of the fore and middle fingers of your right hand upon the left wrist of the patient. This arterial beat is the immediate, not the remote, cause of pulsation, which is due to the muscular force of the heart, which during a systole of the left ventricle closes the mitral valve, and forces the arterial blood through the semi-lunar valve into the aorta, to be distributed through the arterial system.

So much for the mechanical causes of the pulse; we must now consider its characters, and the clinical deductions we draw from them; and here I must observe that my remarks about the pulse apply primarily to woman, and secondarily to that special condition of her sexual life, the

puerperal state; and I have mentioned sex as influencing the action of the heart, which, like all the other involuntary muscles, is controlled by the vasa motor nerves of the sympathetic nervous system, and this again governs the sexual life of woman. As a clinical fact you will find that during labour the pulse rises with the "pains," and falls in the pauses. Lactation is ushered in by a rise in the pulse, and every changeful phase of the parturient state is felt by the heart, and the varying pulse denotes it.

What are the characters of the pulse we are most often called upon to observe? First, frequency; secondly, force; thirdly, duration; fourthly, volume. The three first can be ascertained mechanically by the sphymograph (a barbarous word) and recorded on the pulse chart, familiar to every hospital nurse; but the last, and perhaps the most important clinically can only be noted by *touch*, and this again must be perfected by practice.

Let us consider the points in the order we have placed them.

The *frequency* of the heart's beats varies considerably, and you will see by your text books that the pulsations average, in a healthy adult, about seventy a minute. In the male it is less, in the female above that number; and the differences in the sexes is said to range from ten to fourteen beats a minute. Hence, you see the immense influence sex exerts over the pulse; and in our portion of nursing work we must never lose sight of this fact. The difference has been attributed to stature; but to my mind it seems rather referable to sex and the physiological influence it has over the heart's action in women. We cannot enter upon a dissertation upon the subject here, but commend it to the thoughtful consideration of women engaged in midwifery nursing or practice. Age remarkably influences the heart's beats; they are more frequent in infancy and old age than in the intermediate periods of life; and as our patients are for the most part women in the prime of life, we may take a pulsation of seventy-five as about the normal rate in lying-in women. The pulse falls after delivery as much as ten or fifteen beats a minute, and, as a rule, continues below par until the milk-flow sets in, when it may again rise to seventy-

five or eighty *temporarily*, subsiding when lactation is established. Speaking generally, we may say that a pulse *above* seventy-five is a cause of disquietude, especially when we consider that our patients maintain the recumbent position for some time after delivery.

The *force* of the pulse marks the muscular strength of the heart, and its power of resistance to the arterial blood column in the aorta, shown on the chart by the *length* of the up and down strokes; the *duration* of the pulse also depending upon the *force* of the heart, is shown by the *horizontal* distance between the commencement of the *upward* strokes. Both force and duration depend upon the heart's strength; they can only be demonstrated mechanically, and do not very much affect the rate of the pulse. We must remember that when the left ventricle of the heart has forced the arterial blood into the aorta its task is over; the distribution of the arterial stream is left to the systemic, or capillary circulation, and we shall see how materially it affects the pulse in disease. We have thus in briefest outline touched upon the mechanism of the pulse, and it is upon the integrity and perfection of the muscular tissue of the heart that the calm, majestic pulsation of *health* is maintained, and never forget that *pulsation* means the heart's beats. There is another point—the *volume* of the pulse, the amplitude of the arterial stream, which can only be felt. It may by analogy be compared to *facies*, which cannot be accurately defined, and yet is so well recognised by all who tend the sick, and there are few diseases that set their mark upon the countenance more plainly than those which affect the sexual organs of woman, whether due to childbirth or other causes.

The following are some of the points respecting the pulse that touch reveals to us: it may be *quick*, but weak and compressible; *slow*, but full and strong; *soft*, showing a relaxed condition of the arterial walls, leading us to fear hæmorrhage (post-partum); *hard*, from increased tension of the arterial coats, which may warn us of inflammatory mischief; thus these two opposite states have to be carefully watched in our portion of nursing work. The *bounding* pulse is generally due to disturbing emotions, or a reckless use of alcoholic stimulants; in the former case you will

generally find pallor, in the latter flushing of the face. Having brought before your notice some of the leading phenomena of pulsation, we will next discuss respiration, and then show the influence, severally and collectively, of pulse, temperature, and respiration in diseases of the puerperal state.

Respiration consists of two processes, chemical and mechanical; and this last comprises two acts—*inspiration*, or the drawing in of air *to* the lung cells; and *expiration*, the expelling of air *from* the lung cells. It is with mechanical respiration that a nurse has most to do, and she must learn and observe the number of respirations a minute, and also their character—short, as in thoracic; slow and deep, as in abdominal breathing; or *hurried*, as in fever; and these symptoms may not be accompanied by pain unless the lungs or pleura are the seat of the disease. Respiration, like the pulse, is influenced by a number of circumstances, age and sex being the most noticeable. The number of respirations in a minute is greater in *early* infantile life—as we shall point out to you in that division of our subject—than at any other period of life. They are also more frequent in women than in men. Exercise and the temperature of the air also affect respiration.

The most remarkable fact about respiration is the singular ratio that the respirations bear to the number of the heart's beats in a given period of time (say one minute), which is put down in text books as one to four, and is maintained in health and disease. Taking an average pulse rate of from sixty-eight to seventy-five in women, and considering our patients are mostly in the prime of life, we get from sixteen to eighteen respirations per minute as a fair basis for clinical observation, and a fact you must bear in mind. Position of the body affects the rate of the respirations, and whilst our patients preserve the recumbent position we must expect the rate to be slower on that account. In nervous, hysterical women we get a hurried respiration, without any other untoward symptoms, unless in cases where there are mental troubles to be feared.

Chemical respiration differs materially from the mechanical process we have just touched upon. The first point to claim our attention is the remarkable difference that

exists between the air that is drawn into the lungs and the air that is expelled; the former contains life-giving oxygen, the latter the death-dealing carbonic acid gas. The air we exhale (commonly called the breath) is hotter than the air we breathe, and this increase of *heat* is due to the interchange of gases taking place in the air cells of the lungs, passed off from the lungs as vapour, which is condensed into water when it reaches the outer air, as we can see in cold weather, or by breathing on a looking-glass. Chemical respiration has a two-fold task assigned to it—to maintain the animal heat, and to “burn up” tissue waste; for Nature, like a careful housewife, knows that the best place for “litters” is behind the fire.

Whence cometh this waste material? To answer this question I must now turn your attention as briefly as possible to the capillary or systemic circulation, and show you how intimately it is connected with the “pulse” and “temperature.”

I have pointed out that when the left ventricle of the heart had forced the arterial blood into the aorta, the distribution of it was left to the arterial system, ending in those minute, hair-like terminations called the arterial capillaries. The arterial blood nourishes and renovates every part and organ of the body, but it cannot renovate itself, and it passes on the task to the venous system, which, as you are aware, conveys the venous blood *to* the right side of the heart, whence it is propelled by the *right* ventricle to the lungs for aeration and purification, and thence passing to the left ventricle to be pumped, as it were, into the aorta. The circuit of the blood from one side of the heart to the other is called the pulmonary circulation, and under normal conditions the number of the heart's beats required to effect it are from sixty-eight to seventy-five, taking these as the average rate for both sexes. How is the air brought to the blood? It is obvious the blood cannot get to the air. By the respiratory process. Inspiration draws the air into the lung cells, expiration expels it from them. The number of respirations required to aerate the blood is from sixteen to eighteen in a minute, and the period required for a complete circulation about the same.

Remember there are not *two* bloods in the body, but only one, having different conditions, different names, and a singular physical difference in colour, the venous being purple, the arterial scarlet. The quantity of atmospheric air required to support respiration in health is from four to ten cubic feet per minute, but for lying-in women we require double that quantity to secure aërial purification; hence the necessity for ventilating the room.

I pointed out to you what clinical deductions to deduce from this meagre outline of the circulatory system, as they bear upon the important points of "pulse," "temperature," and "respiration." My readers must bear in mind that my remarks will apply to our patients only, and we will assume the case before us to be post-partum inflammation of the uterus, due to *traumatic* causes (and I include *chill* as one of them) distinct from *septic*, of which we may say more further on. We shall see that just as the lightest breath of wind will deflect the arrow of the weather-vane from any given point of the compass, or the barometer marks the slightest alteration in the atmospheric pressure, and our thermometer the slightest rise in the temperature of the air, so in this nervous sensitive system of ours it is from the capillary circulation we receive the *first* warning of the coming storm.

We have had the severe rigor that showed the shock the nervous and muscular tissues had sustained from some extraneous and untoward cause, for we may be quite sure "inflammation" is no part of Nature's plan, and that she has been thwarted in some way or other; and it is to this point I wish to direct your earnest attention. I fear that my recent remarks may have appeared to my nursing readers to have been unnecessary and tedious, but I hope to show you that the application of them may not be without practical value to our portion of nursing duty, and that a little knowledge is not a dangerous thing in thoughtful hands, if it tends to ward off dangers by averting them through careful and wise precaution.

After the rigor, what do you notice next? Intense local pain, a rise in the temperature and the pulse. Why is this? We shall find the cause in a disturbance of the capillary circulation, in this instance affecting a muscular organ, the

highly vascular and sensitive parturient uterus, which like every other organ and tissue in the body must derive its oxygen (life) from arterial blood, and this again must be re-supplied with oxygen from the air, and for this purpose must be conveyed by the venous system to the lungs for purification. When from any adverse cause this capillary interchange of pure for impure blood is arrested, and an organ cut off from arterial nutrition, we get a condition called *congestion* (marked by the *rigor*), the beginning of the inflammation that will be attended by pain. Why? The vasa motor nerves of the sympathetic or *sensory* nervous system have the task assigned to them of distributing the arterial blood, and for this purpose they accompany the arteries throughout their minutest ramifications, and there is no tissue of the body that requires a more constant and abundant supply of arterial blood than the nerves themselves; and when from any cause the supply runs short, the watchful sentinel (the nerve) sends instant tidings of its *own* and others' distress to head-quarters—the brain—and we call it a sense of pain; were it not for pain we should remain unconscious of danger to any unseen or other organ, and hence even pain has a purpose in Nature's plans.

What happens, then, when the oxygen demands of an organ—in this case the uterus—are not supplied? The venous blood returned to the right side of the heart from that organ is over-charged with carbon "waste," and this must be removed *from*—not returned *to*—the arterial blood (we must bear this fact in mind), and "burnt up" in the lungs. To do this, more oxygen will be wanted, which means more air must be brought to the lungs. The respirations are increased, more carbon "waste" is being decomposed by the oxygen of the air, more heat is generated, the temperature of the body rises, and our clinical thermometer enables us to register this increased heat.

I hope the few points to which I have called your attention will enable you in some measure to understand why increased rate of respiration quickens the heart's action. As we all know when we run to catch a train or tram, and if we are at all "short-winded," the exertion makes us "pant for breath," but if we have a sound heart this temporary acceleration of its beats is a matter of no consequence. In the case we are

considering, the heart is thrown into hurried action from pathological causes, there is an undue strain upon the circulatory "department," the heart bears its share of work, and has more to do in a given amount of time than it ought to have; its duty must be done within the limit of a pulmonary circuit, extra muscular exertion is put forth to do it, and the heart beats are increased; the pulse rises, we count the pulsations, watch in hand, and find them probably two-fold more rapid than they ought to be.

Thoughtfully consider what a pulse of one hundred and twenty to one hundred and forty beats a minute implies. Can we be surprised if the vital powers give way under the continued strain, and that constitutional symptoms show themselves? The tissues feed the fires of fever, and hence the emaciation that follows it, and we must feed the tissues. The food of fever is drink. During the rapid combustion of carbon going on in the lungs water is generated, the pulmonary exhalation is increased, and we sometimes get hot exhausting sweats. The great heat of the body dries up the moisture from the skin and other tissues, the cutaneous transpiration is checked, and the skin becomes parched and burning, intense and continued pain racks the nerves, delirium and prostration of strength show us that the vital powers are beginning to fail under the strain put upon them.

What are the nursing duties for a case of inflammation of the uterus? In the first onset, to endeavour to check the spread of the inflammation, by relieving the tension upon the local capillaries, restoring the circulation. This is generally done by heat and moisture—stupes and fomentations, according to medical direction. Hop poultices are sometimes used, or laudanum sprinkled on the stupes, instead of turpentine, when the pain becomes excessive. The strength of the patient must be maintained by fluid nourishment—predigested milk, mixed with soda-water, if the thirst is great; strong beef tea in quantities ordered by the medical attendant. To every half-pint you can add a pinch of the *best* isinglass, dissolved in a little warm water. Barley water made *very* thin, and acidulated with a little fresh juice, is a soothing drink, taken like all the other fluids from a feeder or through a feeding tube. The pain is too great to move the patient about, but you can

sponge her face and hands, using a little purified borax in the water, as it cleanses the skin from the clammy sweat we get in these cases. Keep the room well ventilated. In winter you will want a fire to help you, but the window must be *kept* open at the top and opened at the bottom morning and evening for a short time. You must protect your patient from draughts during this time by covering her head with a soft woollen handkerchief and keeping the bed-clothes over her. You must get air through the room if possible twice in twenty-four hours. Condy should be placed in plates or saucers about the room. Anodynes may relieve pain, but the best chance of sleep is pure air. In the early stage of the attack an aperient is serviceable, but that matter rests in the doctor's hands; also what and how to be administered.

Assuming that, instead of the attack passing off, it gets worse, what may we infer is taking place? The formation of pus cells in the serous fluid effused from the coats of the capillary vessels, for stagnant blood, like stagnant water, becomes corrupt. This may localise the disease, but it adds to its dangers. The symptoms that lead us to fear the formation of matter are recurrent rigors, the time of which must be put down; rise in temperature and pulse, both to be recorded; increased pain; most anxious of all, vomiting for which ice is required, in addition to medicines. It has often occurred to my mind that if we could get frozen *distilled* water for our patients, it would be safer than the ordinary ice we send for to the fishmonger's or the ice depôts; these last are better. The Wenham Lake ice at one time had a great reputation for purity. In the winter ice is taken from ponds and pools of doubtful antecedents, to the fish shops, and when we send there for ice we have not the slightest guarantee for purity. Of course my remarks only apply to ice for eating for the sick.

I shall not enter into a medical history of these cases. In spite of all the care possible they sometimes end fatally, and nursing duties have to be carried on under conditions that do not fall within the scope of these papers. In other cases the inflammation spreads to the peritoneum, the closed serous sac that contains the abdominal viscera, and at this time the uterus is in the abdomen. This form of

inflammation is called puerperal peritonitis, or para-metritis, and this complication leads to an evil not present in the case we have just touched upon. The abdominal, like all other serous sacs, is lined with a smooth, glistening, soft, almost silk-like membrane that protects every organ it enfolds; but when this membrane becomes the seat of inflammation, an outpouring of plastic lymph takes place, and binds the intestines or other organs to it, as it were; these bands are called adhesions. In the case of the uterus they are apt to lead to future mischief in subsequent labours, for under the strain of parturition the "adhesions" break down, and set up little centres of inflammation, and thus bring old troubles back again. The symptoms that mark this phase of inflammation are constipation and tympanitis, the abdomen becoming hard, tense, and tender. Nourishing enemata will have to be administered, as the food cannot pass through the intestine; injections will have to be given, as ordinary aperient medicines are not suitable.

There is one point I must earnestly impress upon my nursing readers—that the inflammatory fevers occurring during the puerperal period have a special danger attending them; they interrupt the whole phenomena of convalescence from child-birth. Lactation is suspended, the lochia are suppressed, or scanty and ichorous, and, worse than all, the involution of the uterus is impeded. I have briefly described to you the meaning of "involution" and need not repeat it. Whatever interferes with it brings upon a mother all the evils and miseries summed up in the word "sub-involution," a misfortune it is one of the very first duties of Obstetric Nursing to prevent, for difficult indeed is "cure"! We must also remember that these troubles are in a measure *preventable*, and if I have brought them under your notice (I fear somewhat tediously), it is to direct your earnest attention to the terrible results that may follow upon ignorance, indifference, carelessness, or neglect.

One of the most important nursing duties at the onset of fever is what is the best drink to give the patient. I have mentioned in a previous chapter that clean distilled water is most valuable for mixing with other substances, such as tea, coffee, cocoa, and so on, but it is not suitable for a beverage

by itself. Pure cold well water would be the best could we obtain it, but how rarely is this the case in town or country ; and hence I strongly advise a nurse to first filter and then boil, and if necessary refrigerate, every drop of water drunk by the patient, or used in any article of her diet. The obvious advantage of this precaution will be none the better appreciated if we first consider what is water ? In its perfectly pure state as it falls from the clouds, where it is formed, it consists of two gases—one equivalent of hydrogen combined with one of oxygen—and it has then an insipid vapid taste ; the first contamination comes from the atmosphere, in the form of soot, particles of dust, certain gases, and so on, which are strained out of it as it penetrates the surface of the ground as rain. The water that we drink is drawn from the soil, and has then other, and if mineral innocuous, substances mixed with it, and in fact these mineral impurities (?) are necessary to make water a tissue-forming food, for bone has to be built up and nourished as well as muscle and nerve,

You may notice that oxygen is one of the constituents of water, as it is of air. The water we drink has it in combination with hydrogen, the air we breathe has it immensely diluted with nitrogen, the arterial blood is laden with oxygen, which is the life of every tissue of the body. Thus air and pure water, essential to life and health, become none the less essential to disease. In fever, the parched tissues must be incessantly irrigated as it were to preserve life in them ; how important is it, then, that the fluid food for which they crave should be absolutely suited to their needs.

Next to purity of water comes purity of air—far more hard to obtain, unless our patients live in the country. Still, ventilation (especially at night) and disinfectants will help us on even in cities.

Next to water—either pure, distilled, or aerated—comes the most grateful food in fever—fruit—which, of course, should be perfectly ripe, sound, and fresh. Of all fruits the grape contains perhaps the most sustenance, and is the most liked by the fever-stricken. England not being a vine-growing country, grapes with us must be forced or imported, and if we require them in the winter the price is prohibitive to all but the rich. In the summer and autumn we can rely

upon imported grapes, which are far and away better than none at all. In selecting imported grapes for our sick we must use a little judgment. A firm, fleshy, thick-skinned grape, whether black or white, is not suitable for our patients, besides which this kind is not thoroughly ripe. I have found the white muscat (a small, round, thin-skinned, juicy grape) very refreshing, though not having much fine flavour like hot-house grapes have; but as these humble berries are only sixpence, or even fourpence, a pound, we must not expect too much of them; but, at any rate, they are ripe and refreshing, and so far acceptable to our poorer patients. It is better not to eat skin or pips; pulp and juice is all we want.

In cases where a patient is too weak to feed herself with grapes, I have taken one up with a pair of dressing forceps, and held it between her lips to suck out the juice, and then withdrew the skin. Blunt scissors will do as well, and either are better than your fingers.

Next to grapes come, in my opinion, sound, ripe pears, which we peel and cut into quarters, or even less, so that our patient can eat them handily. In winter these are denied us, and oranges and lemons come to our aid. With regard to the former we do not often use them for our patients, as it is considered they do not digest them well; but with respect to the latter, in the form of fresh lemon juice it is most valuable. It can be mixed with aerated, soda, or potash water, or made into lemonade.

Now, what is the value of fruit-food in fever, apart from its refreshing and thirst-quelling properties? Its beneficial effect upon the blood. In inflammation there is an excess of fibrin, upon which constituent, as you know, the coagulation of the blood depends, and also those plastic adhesions I mentioned recently as recurring after inflammation affecting any of the serous sacs. The natural fruit salts, such as citrate of potash, tend to check this tendency to over-coagulation in the blood (if we may so call it), and by rendering it more limpid and flowing some of the worst evils of inflammation are averted. Thus we say fruits and water are fever-foods.

The next alimentary substance to which we have to turn our attention is milk. How are we to get it *pure*? and how

are we to *keep* it pure when we do get it? This question of milk purity is beset with difficulties greater than those of the purity of air and water, for we have far less direct control over them.

In country cases—especially if you are nursing a country lady—we have no trouble to get milk fresh from the cow, and then we can dilute or deal with it according to medical direction. But in London and large provincial cities it is far otherwise, for we have but a very slender guarantee as to its immaculate virtues. In the first place, in dairymen's milk we have to put up with a deficiency in the natural quantum of *cream*, a most valuable constituent for our sick. Nor need we be surprised at this, for otherwise what would become of the cream of commerce unless for some such robbing Peter to pay Paul arrangement? Then, again, how often we become anything but *gratefully* aware of the *services* of that invaluable beast to our friend the dairyman—the cow with the iron tail! We also have to put up with the risk of “mixed” milks, the product of divers cows at different epochs. I am aware we can order a “separate” supply from the milk-shops, but we have no guarantee as to the fulfilment of the stipulation, and it has often been “borne into my mind” that the only thing “separate” about it is the can it comes in. Servants are often careless in the matter of milk, and put it into dirty jugs, or leave it about in the kitchen, instead of putting it in a cool larder or cellar.

I mention these details to show the difficulties the nurses have to encounter in private houses over that supremely important article of diet for our patients—pure milk.

What is milk? Water holding in solution the peculiar albuminous substance called casein, to which milk owes its colour and opacity, various saline ingredients, and a certain form of sugar (glucose) having fatty globules suspended in it, and these globules being lighter than the rest of the fluid, float to the top when the milk is at rest, and we call them cream. In this wonderful compound we find every element for building up the human frame—the tissue-forming albuminoids, the saccharine matter that seems to have something of the properties of a digestive substance or natural peptone, earthy salts that form bone, and the oleaginous or fatty particles that support combustion—

animal heat. Can we be surprised then that nature ill brooks interference with her consummate arrangements? The component parts of milk can be separated by adding an acid, or calf's rennet, the casein being the solid, the whey the fluid constituents. There is a great difference between the "curd" of cow's milk and the "curd" of human milk, the former being firmer, and the latter looser and more flocculent; and it is this difference in the "curd" that is a matter of such importance in infantile feeding, as we shall see when we come to "our" baby. Having brought before you the supreme importance of milk to our patients, let us see as nurses how we can help to get it pure and keep it so. The only thing we can rely upon to tell us the truth about it is our lactometer, which, with the test glass to mark the quantity of cream, every Obstetric Nurse should understand the use of, and have one of her own, as the whole apparatus only costs two shillings, and lasts for years with care.

First as to the lactometer, it is a slender glass stem four inches long, having enclosed in it a graduated scale, on one side of which is engraved fine horizontal black lines, placed at regular intervals and having the figures 1, 2, and 3, respectively placed *above* them. Above the topmost line marked on the scale 1 is the letter W, which stands for water; above the *lowest* line is the little M, which stands for milk, and the letter S, which signifies specific gravity (of milk). Below the stem is a hollow glass cylinder, three inches long, narrowed at the ends and about three inches in circumference. At the lower end of this cylinder is a glass bulb filled with mercury.

The secret we want our trusty little friend to tell us is how much WATER "Mr. Chalk" has *put* into the milk.

Putting our lactometer into a quart basin or jug of milk, we watch events; if it floats at the Fig. 3 at the lower end of the tube, the milk consists of three parts milk, and one of water; if at Fig. 2, half and half; if at Fig. 1, *three* parts water and *one* of milk (and here water means *added* water); if the milk be *pure*, the lactometer stops between the letter M (milk) and the Fig. 3. This is just a rough outline of the subject; of course you make allowances for intermediate distances on the scale; thus the scale might measure three and a-half parts of milk to one of water or *vice versa*. But

the simple point we aim at when we buy milk for our sick or our young is to find out its *purity* as regards *strength*, every drop of added water is weakness as regards its alimentary nature. There are other graduations on the scale of the lactometer, they have reference rather to analyses, and we need not enter into them here, as we are *testing* for water.

So far we have seen how milk can be adulterated with water, impoverished by the loss of cream, "muddled" by "mixing," contaminated by dirty vessels; but there is another and graver evil to be feared—organic pollution. The added water may be infected, the dairy vessels may be washed in it, and in my judgment aerial impurities may affect it, and "germs" find a nidus in its midst, for we know that of all animal substances milk the soonest becomes putrescent. There is another point that to my mind we are apt to overlook. In Nature's plan, milk was not destined to be *kept*, but formed and taken fresh and fresh for the nutrition of the mammalian young, human or animal. Butter, cheese, and cream have been stolen by man for his own use, and to obtain these products milk has to be kept or stored.

Assuming, then, a nurse is fortunate to have half a gallon of *pure* milk, she takes what she requires for *immediate* use of her patients—mother and infant. How will she deal with the rest? If nursing in the country, it may be put into a *clean glass* vessel, if possible, and placed in a cool larder, and may, perhaps, be kept sound from night till morning and from morning to night, if it be winter or spring; but if she is nursing a town, or say a London case, what will you do with your milk then? There is but *one* way to deal with it to give you the slightest chance of *keeping* it sweet—you must boil it at once.

Eminent sanitarians say that, to be on the safe side, we must have the milk boiled to keep it, and that nothing less than a temperature of 212 degs. could be depended upon to destroy organic germs. I recommend you to boil the milk in a perfectly clean tinned iron saucepan, that should be kept for that purpose alone. Before putting the milk in it, rinse it out with clean cold water. I prefer iron to tin saucepans, as the latter is apt to burn, which of course spoils the milk. Boil it as quickly as possible, no coddling. Put the

saucepan over a clear bright fire, or you may have the milk smoked. Keep the lid on the saucepan to prevent smuts or dust getting to it. The best way to boil milk is to put it over a gas-stove, but we do not always meet with them. I object to enamelled saucepans for milk; they look clean, but the enamel is a deadly poison, and when it cracks is bad for the milk or anything else. Nor are copper vessels to be commended for the purpose.

When the milk has *boiled* up (and be quite sure about that matter), pour it out *at once* into a clean jug. When it has cooled down so that no steam is rising from it, have it placed in a cool larder or cellar, and put a piece of clean writing paper over it, and use it as you require. You may have to refrigerate it by packing it in ice, which I prefer to putting ice *into* it. By these simple measures I think you will find that milk can be kept sweet for twenty-four hours.

Our next point is to find out the deficiency in cream. For this purpose we require our test glass, cylindrical in shape, seven inches high, and two inches in diameter. At the *top* of the glass is a small graduated scale, consisting of five *long*, horizontal lines, having the Figs. 0, 5, 10, 15, 20 respectively placed on them, with sixteen short lines to mark intermediate distances. Assuming that the milk in the cylinder is rich in cream, the layer would extend *from* Fig. 20 to Fig. 0; if deficient, from Fig. 15 to 0, or 10 to 0, 5 to 0, and so on, becoming rare by degrees and beautifully less. The only peccadilloes of Mr. Chalk's that we can in a measure condone, is the *subtraction* of a portion of the cream from our milk for commercial purposes; but the *addition* of water is an unpardonable offence in my eyes, for a very little reflection shows us how greatly it interferes with the natural and perfect proportions of the milk constituents; it deteriorates the food *value* of every one of them. Like a false note in a melody, it throws them all out of tune.

We have considered water, fruit, and milk, we now come to eggs, an invaluable alimentary substance for our patients. In country houses we have no difficulty in getting them newly laid; in towns we must buy them, and remain in ignorance of the hens that laid them (which, in most cases, is "bliss"). When we have to buy eggs, our best chance to get them good is not to "haggle" about the price, for the

dearest are most likely to be the best. What is an egg? It consists of four portions—the ovisac, or shell, the yolk, the germ, and the white. The first is of no nutritive value, but it guides us as to quality, for it is only in well cared-for country hens that the shell is perfectly formed. It should be smooth in texture; white, brown, or brownish-pink in colour; and when broken the interior of the shell should be a delicate pinkish-white. It is lined with a beautiful fine tender membrane, called the synovial membrane, from which the shell is formed by having minute particles of phosphate of lime (a combination of oxygen and calcium) effused into the interstices or cells during the passage of the egg through the oviduct. The yolk, or *vitellus*, consists chiefly of oil globules and albumen, and floating in this fluid is a very distinct nucleus termed the germinal spot or germ, commonly called the “tread.” Then the white or albumen, which is found in all the nutritive fluids of the body, and is analogous to the serum of the blood; it contains a minute portion of sulphur, and, as you know, it coagulates by heat.

Eggs may be taken cooked or uncooked. We will take the last first, for I think we may conclude that the general consensus of medical opinion goes to show that they possess more nutritive properties for our sick in the raw state; and then, again, are we to give them plain, or mixed with something else? and, if so, what? Let us first consider under what conditions we have to administer them; in one case to renovate, or help to renovate, the tissues wasted by the fires of inflammation, and what we most rely upon is the tissue-forming albumen—the white of the egg—and it is this substance that undergoes such a remarkable change under the influence of heat, passing thereby from a soluble to an insoluble condition, and a little reflection will show us that the former is the more assimilable, and this point must be our guide in giving eggs as food for the sick. If we decide upon the uncooked egg, how shall we give it? and what will be the best time?

First, as to method. My own experience, personal and professional, leads me to the conclusion that a small quantity of *pure* cold water—distilled if you have it—is the best substance to mix the egg with, and I prefer to give it on an empty stomach, and this is how to prepare it. Take a

perfectly fresh egg, crack it into a clean breakfast cup; take out the "tread," beat the egg up to a froth, reducing the albumen to a state of fine division. You can hardly beat it too much. Get two ounces of pure cold water, and add a good pinch of salt to it, and pour it in *gradually* to the egg, beating it all the while, and give it to the patient in a foaming condition. There are not many women who will not take a raw egg in this wise. There is very little taste in it one way or the other, and once "down" I never remember seeing it ejected. You may ask, Why this form? Firstly, because the albumen of the egg dissolves more readily in water than anything else, and we wish to render it soluble. Secondly, a valuable alimentary substance like an egg is better given to our sick separately and plain, so as not to overtask the digestive powers; *one* thing at a time, and that thing of the best, is the wiser way to build them up again, than *overdoing foods*, however valuable in themselves. Thirdly, that the alcohol in the form of brandy or wine, which *does not* dissolve albumen, nullifies on that account the good we hope to get out of it. My remarks apply only to our sick. I do not say it is a *pleasant* way of taking eggs, but I most earnestly think it a wise one, and I have known excellent restorative effects follow upon *one* egg a day, taken in this way fasting, how many more will depend upon medical direction. Brandy in milk is highly serviceable under certain conditions, but I think very differently as to brandy or wine with eggs.

We will now turn our thoughts to cooked eggs, much nicer to take and most valuable during convalescence, when we are patiently endeavouring to build up the system after the devastating ravages of disease. In cooking eggs (and there are countless ways of cooking them), the first point to consider is, shall they be given plain or mixed with other things. To my mind, the former is more desirable, for, in feeding our sick, women especially, I have found it wiser to simplify meals and vary them as much as we can, for in our task of renovation we *must begin* with the stomach, and do all we can to tempt appetite. For cooking eggs, no way approaches the omelette, which can be made sweet or savoury, and taken at any meal. This elegant preparation requires dexterous manipulation and judgment;

but it is so rarely compassed by our English cooks that a nurse is not often able to get it for her patient, for their utmost efforts in this direction begin and end with a *soufflé* of more or less (and generally less than more) merit. Next to the omelette, the best form for our patients of egg cooking is the familiar "buttered egg," and I have found the following way of preparing it acceptable to most ladies, especially for their breakfast. You will require a small block-tin (or silver) saucepan, into which you put a piece of best fresh butter, about the size of a hazel nut, and place in the pot (a nurse generally has to prepare this little confection in her own or the lady's room) to melt. Crack a perfectly fresh egg into a teacup; take out the "tread," and with a small silver fork stir white and yolk *gently* together. Into another teacup put as much dry mustard as will lie on the end of a teaspoon, a little ground white pepper, and a pinch of salt. To these ingredients add a tablespoonful of cream. You now make a slice of thin toast, and butter it on one side and place it before the fire on a small plate till you are ready for it. Put the cream, &c., to the egg by degrees, and *stirring* all the while; when the ingredients are well mixed, pour them all *quickly* and at once into the saucepan, hold it *over*, not on the fire, with one hand, and commence stirring with the other, and do not leave off stirring until the end. And now comes in all the "science" of this simple concoction. How are you going to stir? In this wise, as soon as the egg begins to set draw the "flakes" away from the sides and bottom of the saucepan with the silver fork, turning them lightly about; when all are set lift them out of the saucepan with a silver teaspoon, and place them at once upon the hot toast; the egg should be pale straw colour all over, light, flocculent, and about the consistency of boiled custard. Most patients like an egg in this form. If prepared for lunch or supper, omit the seasoning, add a little castor sugar instead, and serve it with preserved fruit syrup. The next form in which eggs can be utilised for our patients is in custard to eat cold. As nurses we cannot make the custard, and must rely on the cook or *chef*, and meekly suggest to those exalted functionaries that the cream should be well *en evidence*, and used with no niggard hand, and that blanched

and freshly grated almonds—sweet and bitter—to be strained out when the custard is done, are safer and more delicate for flavouring than the shop ratafia; the addition of a little of the best pale French brandy into the custard when cold brings out the flavour of the almonds, and is altogether an advantage; but this point must be subject to the wishes of the patient or medical attendant.

My nursing readers will observe that in these egg preparations we have just touched upon, in the first instance the egg is not cooked at all, and in the two last very lightly. Overcooking diminishes the reparative value of the egg; the routine baked and boiled custard puddings fail in this particular.

Soups have a great dietetic value for our convalescents, but we cannot enter upon so wide a subject in these pages. Speaking generally, the clear are better than the thick, and the addition of vegetables to either may be regarded (as far as our patients are concerned) as doubtful, in the face of digestive troubles. Perhaps of all soups, the *Potage à la Reine* has the most nutritive value for our recovering sick, being a felicitous combination of flesh and fish.

The last dietetic point we shall touch upon for our sick patients is wine. Fierce controversies have raged over the subject of stimulants, and, like smoke upon the field of battle, have obscured the issue of the fight, and led each combatant to claim the victory. We will not mix in these strifes, but thoughtfully consider when, why, and how wine may be of service to our patients.

This question of stimulants is a thorny one in our path of nursing, requiring on the part of a nurse firmness, kindness, and that "discretion" which in this case is by far "the better part of valour," for we are not zealous to "air" our own opinions, so much as to conciliate and guide those of others. The first point I would earnestly impress upon the minds of my younger nursing sisters is, that stimulants, like drugs, should only be administered subject to the *knowledge* and consent of the medical attendant, for under the ordinary conditions of childbirth they are not necessary, and their indiscriminate use by patients or nurses is entirely to be deprecated. I have dwelt upon the preparation of simple nutritious foods for our patients,

because we must all recognise how important judicious feeding is, and how it will, by *uniformly* sustaining the patient's strength, do away with the desire and excuse for stimulants.

Remembering that alcohol is not necessary to life any more than gunpowder is, we must not forget that it *is* necessary for the *defence* of it under certain conditions; and there is no drug in the Pharmacopœia that can compare with it for efficacy in the hands of a wise and able physician, and in my judgment the men of past generations recognised that fact more than the men of to-day as far as medical practice was concerned. Our opponents frequently assert that patients only take, and doctors only give wine to them for the sake of the alcohol it contains. Can we admit this when we know that those wines which are the most serviceable to our patients contain the least alcohol? Potatoes, parsnips, and fifty other things, will yield alcohol under fermentation; but can we allow that these miscellaneous substances have the efficacy and value that *wines* of choicest vintage have? And remember when we *do* give wine to our sick no wine is too good for them. Where then does the objection, "merely a question of alcohol," come in? Again, we are told that "wines" (?) can be manufactured in the laboratory of the chemist from substances that bear no resemblance to grapes. These similitudes may be marvels of synthetical chemistry, but they are worthless for our sick; they are *not* wine.

What we understand then by wine is the fermented juice of grapes, black or white; and these last are sometimes dried, and from them are made the *vins de paille* of so many renowned vintages. A wonderful property about wine, to my mind, is what I will call its "heredity," the productions of celebrated vineyards being the same through countless generations, and they who understand wines know the place of their growth by their flavour, even though it be only from one side of a hill to the other. The productions of wine-growing countries differ remarkably. Sherry has no resemblance to port, nor the Rhenish wines to those of France, and yet they all contain *alcohol*, the very least part of their merits; and in wine-growing countries and wine-drinking nations inebriation is *not* a national vice; hence

we may infer that the virtue of wine is something better and different to alcohol.

Man has for ages fermented his bread for food. Are we to admit that he eats it for the *sake* of the "leaven," and that he would be just as well upon "damper"? Man has for generations fermented the grape to make his drink. Are we to infer that the potential energy as food of corn and grape is destroyed (?) when they are converted into bread and wine by the somewhat analogous action of a leaven. I merely suggest these matters to the consideration of my nursing readers, in order that they may bear in mind that when we give wine to our patient it is *not* as a stimulant only, but in virtue of certain sustaining powers that *good* wine affords when foods fail us, and the strength of the patient begins to flag. It is far otherwise with brandy or other spirits. They *are* given as stimulants only. There is no sustenance in them, and the less we use them the better, and, as I said before, subject to medical direction. Wine is most serviceable in certain phases of convalescence, and in our portion of nursing work the more frequently prescribed are clarets and champagne; and we have resort to them under very different conditions.

The first point to give us anxiety is can we trust the weapon (?) upon which we rely? Is it not but too often a case of "twisted" bayonets, faulty swords, and rifles that are more to be dreaded by ourselves than our foes? The adulterations of commerce may deprive the remedy of its force, and in our case "force is remedy," for it means *purity* and the sustaining strength that springs from it; better for our sick to have no wine at all, than wine (?) that does them no good, and generally come in with the groceries! In this matter of excellence of wine, much, but not *all*, depends upon the social position of your patient, and the resources of the family wine cellar. No expense or trouble should be spared to obtain whatever wine the doctor orders of the *best*, and we may more reasonably expect to find *quality* from leading wine firms, than in ordinary shops—or, worse still, publichouses.

We find claret good during early convalescence after hæmorrhage, and with a tendency to its recurrence; if with feeble pulse and cold skin it is best to give a small quantity,

say, at lunch time, and again in the afternoon instead of tea, mulled and without water, and with a piece of thin dry toast sopped in it; if there is slight feverishness give it with cold water without sugar, you will not need toast with it this way. Sometimes Burgundy is ordered, largely diluted with water, and this also is taken cold.

Our next ally is champagne, a white wine when pure; and how often do we get it so? Doubts and difficulties beset us on all sides, for not only have we adulteration to encounter, but have similitudes that are not wine at all, and whose shining merits (if they have any) are confined to a gorgeously labelled bottle, and the amount of noise and froth that accompanies their escape from that dubious receptacle. The manufacturers of these compounds should be compelled to spell them with a big S, and those consumers (and their name is legion) who do not know "shampayne" from real can rejoice in them; but we, as Obstetric Nurses, and sensible women, distinctly decline them for our patients, gentle or simple.

Assuming that we have a champagne that we can trust, why and when do we give it? There is sometimes a point in convalescence after childbirth when the patient's powers begin to flag, and neither she nor we scarcely know why. The woman is tearful and depressed, without any assignable cause for such depression; her appetite falls off, and food is only taken under persuasion. Now we know very well when appetite fails the next thing to fail will be sleep, and our patient will drift into a serious condition, unless we can try and do something to avert it. I have not seen much good come of medicine, and as the patient is not sufficiently well to be taken away for change of air, we must resort to other means to restore her, and we will see what good wine (champagne) will do for her, and the first use we will make of it shall be an attempt to win back appetite. The most important meal in the day for our convalescents is the mid-day dinner, and as champagne is *par excellence* a dinner wine (when it is worth drinking), we will begin with it at that meal. What shall we give with it?—a great deal goes to this point. Champagne and mutton chops would be rank heresy, and "sweets" will spoil the flavour of the best vintages. Fish or poultry will be the best viands to

choose, or if game, partridge should be selected as the most delicate.

In the case we are considering we will have a whiting prepared for the lady, as about the lightest and most delicate fish—fried, of course, *secundum artem*—and with it can be eaten bread and butter (white or brown), and to drink with it a glass of champagne, which we expect—and not without reason—to tempt down the dinner. We vary the meal next day with chicken, roast preferably, with bread sauce, and repeat the wine; and I have seen this simple plan pull a patient out of the “slough of despondency” and get her round again. Of course we go on with the milk porridge for the supper meal—that is so essential as an article of diet at this time that it must never be omitted—and those preparations of eggs we have recently discussed, we only have the wine to get the food down. With respect to the quantity to be taken, that must depend upon medical direction, and also as to how long the champagne is to be continued. My nursing readers will, I hope, by this brief digression understand the different circumstances under which we use claret and champagne, which we may fairly call in this case medicinal nourishment.

Before concluding this lengthy chapter, I must ask my readers to go back to that portion of it when the lady was well enough to return to her drawing room, and was making fair progress towards recovery. We made a digression to show you how an attack of post-partum inflammation would retard that happy consummation, and pointed out to you the important nursing duties required by it, and we will assume that our patient has fairly recovered from the attack. Though convalescence has been tedious and anxious because of it, under normal conditions a patient is well enough at the end of the third week to go downstairs and move about the house, bearing in mind that a large portion of each day *must* be spent on her sofa, and by the month's end—season and weather permitting—a lady will be well enough to leave home for change of air, a most important matter to *complete* recovery.

Some little judgment is required in selecting the health resort, and more to the temperament of the “convalescent.” For instance, fair-haired, fair-skinned, blue-eyed, and rather

stout women of lymphatic temperament generally long for a bracing air, and like to go North and to the seaside; other women, again, of nervous, sensitive temperament long for sunshine and warmth, and will prefer to go South. To send the former to, say, Bournemouth, and the latter to Filey, would not be altogether wise, and yet I have known women sent off in that headlong sort of way for change of air, and wonder why they are no better for it! It is subversive of discipline, I admit, but I should always hesitate to send a patient to a spot she did *not* like, though it might be thought good for her, for in my opinion the best way to get a woman well is to make her happy.

There is another point about this going away that I think we are all apt to overlook—that convalescence is not merely “getting over” confinement, but “getting over” the long and weary strain of gestation, for most women are really more or less invalids for the whole time, besides the two or three weeks (at the best) after delivery. It is the reaction from the strain, mental and physical, upon the system, that in my judgment sometimes leads to those little breakdowns we have just described. There has been a drain upon the vital powers, and Nature demands repayment, and happy they who can satisfy her.

PART II.—INFANTILE.

CHAPTER I.

INTRODUCTION.

INTRODUCTION—BIRTH—THE FŒTAL CORD—PULSATION OF—
THE FŒTAL HEART BEATS—RATE OF—PULMONARY CIRCULATION DUE TO AN INSPIRATORY ACT—"CRYING"—
UMBILICAL CORD—MODES OF SEVERING AND LIGATURING SAME—PREPARATIONS FOR WASHING AND DRESSING THE INFANT—NURSE'S CHAIR—KIND OF—POSITION OF—BABY'S BATH—BEST KIND.

"Of all the joys that brighten suffering earth,
What joy is welcomed like a new-born child?
What life so wretched but at its birth
Some heart rejoiced, some lip in gladness smiled?"—

Hon. Mrs NORTON.

WE must now turn our attention to our next patient, the long-suffering and much-suffering baby. Could he give verbal utterance to his woes, they would move the stoniest heart to pity. We behold him subjected to manipulations that can only be based upon the assumption that nerves form no part of his organisation—that, in fact, he is as insensitive as wood. Was there ever such a subject of experimental philosophy (maternal and grand-maternal) as he in respect to all that goes down his hapless little throat, other than his natural aliment? We feel sure they must cause him excruciating discomfort. He cannot resist these misguided efforts on his behalf, but he resents them, and ventilates his grievance in shrill and plaintive cries, which in turn are soothed by mysterious compounds of infallible (*reputed*) efficacy, which, on the whole, seem rather to aggravate than assuage his miseries. Having, I trust,

evoked the sympathy of my readers on his behalf, we will do our best to tend and comfort our little man to be.

The first point to which I must ask your attention is the pulsation of the foetal cord at the moment of birth, for upon that momentous throb hangs the issue of infantile life or death; a pulseless cord marks foetal death, and birth is not always crowned with the bright diadem of life. The rate of pulsation is immense. Taking the cord between your fingers, you will feel with what resistless force the stream of blood flies on. These marvellous pulsations mark those of the foetal heart, which propels the blood to the placenta for aëration, and beats at the rate of one hundred and fifty strokes per minute. Place the palm of your hand softly over the infant's heart. You will perceive that its pulsations are also extremely rapid, but less so than those of the cord. They are computed at one hundred and twenty to one hundred and thirty per minute. I can only compare that rapid fluttering little heart to a bird's, and those of my readers who have a pet one in their hands will understand my simile. We next notice the establishment of the pulmonary circulation, which means that the infant has an independent existence, or *life* in its literal sense, and henceforth will aërate his own blood. The beginning of this important function is the first inspiratory act, commonly called crying, and we are such hard-hearted nurses we do not care how much he cries, calmly regarding it as a salutary effort to expand his lungs! After this transference from the foetal to the infantile circulation, a change comes over the umbilical cord; it becomes pulseless, cold, and flaccid. Its purpose is fulfilled.

At this point we will say a few words about this singular foetal appendage. You will find that it varies remarkably in the physical properties of length, size, and form—its average length is from 18 in. to 20 in.; the shortest in my experience was 10 in., and I once measured one 45 in. long. As to size, it may be thick or thin, the size of your thumb or your little finger (women's hands), and it may be thin in some parts and thick in others. In form it is generally spiral, but it may be irregularly so; straight here, twisted there. The long cord I just mentioned was beautifully and regularly spiral from end to end, and rather slender; again, the

funis may be irregular in size, immensely enlarged at one part, and small in others. Another singularity about the umbilical cord are the curious knots we sometimes see in it, perfect loops. Books tell us they are formed at a very early stage of foetal life, which may very likely be true, but to my mind these knots are something of the nature of an Obstetric puzzle. The knots exist; how these loops were formed is another question.

The funis is frequently twined round the infant's neck at birth. Sometimes there are three or four coils—a matter of little consequence in the hands of a skilful practitioner, though careless manipulation may injure the infant's throat, as occurred in a case that came under my notice some time ago, and almost proved fatal to the child from subsequent swelling and inflammation of the gullet. You may sometimes observe little excrescences here and there about the funis, pouching out something like a varicosed vein, or, again, little masses of jelly-like substances. Whatever may be the physical peculiarities of the umbilical cord, this remarkable gelatinous sheath at once incloses and protects the bloodvessels that serve as the media of communication between the foetus and the placenta. The one vein called the umbilical vein conveys arterialised blood from the placenta to the foetus; and the two arteries, called the hypogastric, return the blood from the foetus to the placenta for aëration. The first thought that occurs to us is, *why* this singular transference of function—a vein taking on the duties of an artery, arteries of a vein? A great physiological problem goes to this apparent discrepancy. During intra-uterine life the pulmonary circulation remains in abeyance; hence the blood required for the nutrition and growth of the foetus can only be aërated in the maternal system, and this again through the interposition of that wonderful foetal appendage, the placenta, which is at once dependent and independent of the maternal organism, and may be regarded rather as a parasitic than an integral portion of it; its function is purely temporary, and it is thrown off soon after the birth of the infant.

Pursuing our subject, we will briefly trace the course of the blood in the vessels of the umbilical cord, as it flows from the maternal to the foetal, and from the foetal to the

maternal systems, having the placental structure interposed between the two circulations, and I will italicise certain anatomical points special to foetal life.

The arterial blood brought from the placenta in the umbilical vein is in part, and at once, conveyed by the *ductus venosus* to the *vena cava ascendens*, thence to the right auricle of the foetal heart, passed through a large aperture between the auricles (called the *foramen ovale*) to the left auricle, transmitted to the left ventricle, by which it is propelled into the ascending aorta, which supplies the branches that proceed to the head and upper extremities, returning thence through the jugular and subclavian veins to the right auricle *for the second time*. Directed by the *Eustachian valve* it then enters the right ventricle, which in adult life sends the blood to the lungs for aëration; in the foetal, through a temporary channel called the *ductus arteriosus* to the descending aorta, for the blood supply of the trunk and lower extremities, and then divides into the common iliacs and these into the internal iliacs, which become the hypogastric arteries, and return the blood along the umbilical cord to the placenta for reoxygenation. There is also a foetal portal circulation, which we need not dwell upon here. Its purpose is to pass a portion of the blood from two branches of the umbilical vein that unite with the portal vein, returning the blood from the intestines into the substance of the liver, thence to be conveyed to the *vena cava inferior* by the hepatic vein, and depurate the blood before it returns to the placenta, as one would strain off impurities in a water filter.

I have merely outlined these interesting physiological points in order to direct your attention to the foetal circulation, and commend it to your thoughtful study, as we shall find it has an important bearing upon early infantile life, and to my mind is one of paramount interest.

Having thus far digressed from, we will now return to our duties, and what is commonly called "separate" the infant from the placenta. There are two modes of doing this—by cutting or torsion. In the former ligatures are required; there can be little doubt that the latter is the more effectual of the two, and it can be done without difficulty. In cases of spontaneous tearing of the cord, which of course does not often

occur—such as the infant falling from the mother whilst she is in a standing position, or falling off the bed, in the absence of assistance—nothing can exceed the perfection with which Nature does her work. I venture to assert there would never be umbilical hæmorrhage in her hands! However, if this plan be effectual, it is far from being expedient, and we therefore rely upon our routine resources of scissors and thread. What sort of scissors? I have mentioned that the safest and best are a small pair of *round-ended* ones—drapers' scissors, in fact—and every Obstetric Nurse should have a pair; and rough thread is far better than glazed. And at this point let me give my young nursing readers a word of caution—*never* to hurry the separation; let the pulmonary circulation be thoroughly established first, aided by the invaluable efforts of the infant in that direction by cries. It is but a too common practice of the “incapables” of our sex (of *course* there are none in the other) to separate with such desperate haste as to jeopardise, and even to my knowledge more than once sacrifice the infant's life through such crass ignorance.

With regard to placing the ligatures, the one nearest the umbilicus should be about three inches from it, the second about the same distance beyond the first. Before cutting the cord, place the corner of a napkin *under it*, then fix your scissors, and cover them and the cord over with the napkin *before* severing; this last receives the blood that flows from the cut ends of the funis, and saves mess from its spurting about. There is a clinical point to which I must now direct your attention, and for this purpose we will fix, but not *secure*, the ligatures, and sever the cord. Now what do we observe? A rapid stream of arterial blood jetting forth from both the cut ends of the umbilical vein, with all the characteristics of a severed artery, but how widely different are the *consequences* that arise from the hæmorrhage from either end of the cord. In the umbilical portion, if unchecked, it would prove speedily and inevitably fatal to the infant's life. From the placental end of it is no consequence at all, and has not the slightest influence upon the maternal system. In the one case, the integrity of the ligature is of *vital* importance, in the other of none at all; it is absolutely unnecessary, though as a matter of cleanli-

ness it may be expedient. In my own practice I disregard the placental ligature, and share the opinion of many eminent Obstetricians, that allowing the blood to flow from the placenta aids its detachment. A professional friend of mine urged against this procedure that in cases of twin labour, where the placentæ are more often anastomosed than distinct, that if we were to leave the placental end of the funis free, the hæmorrhage therefrom might prove disastrous to the second infant. Without quite sharing his opinions, I have so far deferred to them as to ascertain if my patient was to be "twice blest" before freeing the placental ligature.

As regards the mother, we know the parturient state resembles no other; and I must remind you that the conditions of early infantile life are like no other state, and never recur in the same individual. The knowledge and management of these conditions constitute a most important part of Obstetric Nursing, and are absolutely special to it; hence we shall have to give them careful and minute attention.

I have pointed out the first duties to the newly-born—told you what to do, and how to do it; hence it is not necessary to repeat them now. We will let our little friend be where we left him, on the bed in his receiver, and make our preparations for washing and dressing him; and here let me remind you that there is not the slightest necessity for hurrying on these duties; in fact, they are better deferred until the infant has had plenty of time to vigorously exercise his lungs and limbs.

Where you will have to attend to the infant—that is, whether in the mother's room, or an adjoining one—will depend a good deal upon the arrangements of the house, or the wishes of the lady. If in the former, arrange to sit in such a position as will enable you to watch the patient from time to time, to note any symptoms that may arise to indicate the existence of hæmorrhage—such as restlessness, yawning, or pallor. If you have to leave the lady's room, you must either defer doing so for at least an hour after delivery, or get someone to watch the patient during your absence and report to you anything that may require your presence. I must earnestly impress upon my younger nursing readers

the prudence, if not the actual necessity, for these precautions, as disaster may follow from their neglect. When making preparations for labour, you will have put out the infant's clothes to air with the mother's, and also have secured beforehand a plentiful supply of hot and cold water; so, those duties done, we will get things in readiness for the washing and dressing of the baby.

And here I must premise that I shall enter very minutely into all the details of the infantile portion of our duty, and I fear to some of my nursing readers they may appear trivial, tedious, unnecessary. They know all about them, they may say. Possibly they do; but a wide experience in midwifery work has long shown me that women engaged in midwifery *nursing* cannot have a wide and comprehensive knowledge of it, from sheer want of *experience*. Their period of instruction is comparatively brief, and women who get from nine to ten cases a year at most would scarcely in a lifetime obtain the *experience* that would cover a year's work of women engaged in institutional or private midwifery practice. A recognition of this fact long since convinced me that there was no portion of nursing work where a practical manual could be of more use than in ours, and it is to strengthen the hands of women to whom are entrusted the care and management of the newly born that I applied myself to my task, and I trust that what I have to impart will prove of use and profit to my sister workers, and show the immeasurable importance of a *good nurse* to the health, well-being, and comfort of the little patient.

What shall we wash our baby in? Ninety-nine times out of a hundred we are supplied with about the worst thing we could have—hand-basins of the most aggravating character. The size of some is adapted to an infant Daniel Lambert, of others to a Liliputian baby; sometimes the contour of the rim is broken by “jags,” that fill us with apprehension for the shoulders of our baby lest they should be scratched, and again the integrity of the entire structure (?) appears to be jeopardised by ominous “cracks,” giving rise to fears of impending dissolution of the component parts of this doubtful bit of crockery, only kept together by slips of something or other plastered on the outside. We will

decline basins then, and decide that our baby like a true-born Briton (as we shall assume him to be all through), shall begin life with his bath; and I will describe one to you, made many years ago by the directions of a nursing friend of mine, who had a very aristocratic connection, and "her baby's" bath was as much a matter of course as his *layette*. It was *oval* in shape, and bevelled round the edge, and, like other baths, painted outside and enamelled in, and was often made to look very "smart." It was sixteen inches long, twelve wide at the top and bottom, and *seven inches* deep, and of course handles at each end. Now, this little bath is inexpensive, and can be made anywhere. In addition to it there were two tin trays, perforated at the bottom, loose, but made to fasten on to the sides of the bath if required; one was for the flannel and sponge, and the other for the soap.

There was also a wooden frame to fit the bath in, standing upon four legs, about fourteen inches high; these supports were hinged, so that they could be doubled up when necessary for the purposes of packing up for travelling. A large cover was made to fit the bath, and when a move had been decided upon, all baby's bath traps were put in—rough towels, dressing basket, &c.—and wherever baby went the bath went, and thus things were all kept together ready for use. These last *addenda* are quite optional, but being convenient under many circumstances, I thought it as well to bring them before the notice of my nursing readers. If the bath has not a stand, we must place it on a chair, which does just as well for every-day use. Nurse should have a low chair provided for her (I object to a *rocking* one), or, quite as good, an ordinary bedroom chair cut down to fit, so that her feet rest flat on the floor; about fourteen inches is the usual height of a nurse's chair. If you have neither of these arrangements to deal with, take two bedroom chairs, put the bath across one, and sit on the other, and rest your feet on the rail of the one the bath is on. The great point you have in view is to keep your *knees on a level*; unless you do that you will never make a *good lap* for your baby, nor wash nor dress him gainly nor comfortably. The making of a lap is very much overlooked by thoughtless nurses, to the much misery of the infant, who is sometimes on an inclined plane;

at others in a hole, between his nurse's knees, a most awkward position.

The chair must be placed close to, but not in *front* of, the fire; the one you sit on should be drawn towards the mantel-piece, which will prevent your face from being scorched by the fire, and your temper from the perturbation that might ensue therefrom. In addition to the two chairs, you will require a third, if there is no table available to put such things on as we shall require for our use. All Obstetric Nurses know that it is usual to provide a very "smart" baby basket as part of the *layette*, but on this occasion, and for some time to come, we shall decline that ornamental article, and use one of a more humble and useful description. I use a small tray basket, at the bottom of which is placed one of the doyleys that have, at divers times, been worked for and given to me for that purpose. On this we place a small tin box of vaseline that we can renew when necessary; a little pin cushion to hold the very few pins we require, including two or three safetys; and a small pair of sharp-pointed scissors. Besides these we have a small bag to match the doyley, which holds a needle case, thimble, cotton, some pieces of linen rag, and a "dust bag"—that is, some powder tied up in a piece of old book muslin that has been washed up. There is a lovely powder box in the basket, but for the present we are going to admire it only, as we do not use "powder puffs" to begin with.

What sort of powder shall we use? A great deal goes to this matter, for the indiscriminate use of toilet or face powders, as they are sometimes called, is much to be deprecated on account of the possibility of their containing injurious mineral ingredients. There is more carefulness shown in this matter than there used to be, but in my early days of practice I saw bad results to infants from the want of attention to this matter. Why do we use powder at all? Simply for its desiccating properties. A newly-born infant's skin is extremely tender, and in the flexure of the joints of the limbs it is difficult to wipe the skin *perfectly* dry, and we use powder to the wet surfaces to sop up the moisture and thoroughly dry them, and thereby prevent chafing. There are few things better for this purpose, and certainly none *safer*, than *very finely powdered* starch. I recommend the

use of the well-known Glenfield starch, and prepare it in this wise : Take, say, a quarter or half a pound packet, place it on a sheet of clean demy paper and put another over it, and pass a heavy rolling-pin over and over it ; then put the powder into a clean canister, ready for use ; tie up as much as you require into the piece of old book muslin I mentioned, and it will come out as *fine* as possible—not *floury* ; we do not want a *flour*, but starch, in a state of fine division, and we shall find this simple preparation most useful during the early days of infantile life. Perfumes are quite unnecessary, though I do not mean to say there is any harm in them ; the only scent I care for for our use is a few bags of sweet lavender, put into the drawer with baby's clothes.

What needles shall we use for our sewing ? Large are safer, and therefore better, than small—say 3's. The cotton should be strong ; Brook's glaze thread, Nos. 16 or 18, I find as good as any. Baby's clothes are on the towel-horse close to our hand ; they consist of shirt, flannels, night-dress, square, and last, but by no means least in importance, the belly band, which should be *invariably* made of *new* flannel, the finest Welsh being preferable to any other. As to its length, the width of the flannel is a good guide ; with respect to depth we want to be more accurate. I find six inches about right ; we turn up a hem of two inches at the bottom, which reduces the depth to four inches. For first use, and for about a week afterwards, I prefer the binders to be unmade, *i.e.*, having the edges raw. We shall require three or four napkins, one soft diaper towel, and two soft cotton Turkish towels ; you roll up the binder to its full length and place it on the basket, with a piece of linen rag ready for use.

Every Obstetric Nurse must wear a belt during labour, and secured to this belt by a silk cord a pair of round-ended scissors, such as we use for separating, and I shall show how useful they may be to you now. Our next care is to get baby's bath ready. And now we enter upon what I may almost call the "water worries" of this portion of our duty. Those of my sister workers (and I fear their number is few) who, like the writer, have had the inestimable comfort of distilled water for the baby's bath, will agree with me we never wish to have anything else for it, so long as our term of duty lasts. The next best is

clean rain water, commonly called "soft," which is distilled water from the clouds, but in towns perfectly unusable from the impurities that contaminate it; in the country we may be better off in that respect, but the doubtful condition of the soft water tubs and tanks makes it unsuitable for our purpose, and we know that roofs and waterspouts have had the "first wash" in it, and unless we can have some caught in clean vessels as the rain falls, we cannot rely upon it. We must not waste time upon lamentations, but set to work. We have a town baby to wash, and only town tap water to deal with, and what shall we do with it? Some put their trust in soaps, with about the same results as are said to follow putting it in princes.

We know that some kinds of soap soften and cleanse the skin better than others, but, judging from my own experience, I should say that the soap has yet to be invented that will soften the asperities of the fluid sent us by the (hard?) water companies which supply most big cities. To mitigate the hardship of our lot, I find the prepared Californian borax, sold in small square packets, half a packet dissolved in a half-a-pint of boiling water, and added *in solution* to the bath water, about the best; at any rate, it renders us more independent of soaps, for most ladies like to select their own for us. As a rule, I prefer the very best white curd soap, kept for a month or more before using. It is as reliable as any, and it is the basis of most toilet soaps: there is no perfume in it, but I see no use in perfumes for a bath soap. As I said before, a nurse has to leave this matter for her employers to decide. Still, you are often asked about it, and in the midst of so many kinds of soaps, all having the highest possible virtues (according to the makers), it is as well to have some opinion of your own. It is of more importance than is generally thought, the selection of soaps for washing tender, newly-born infants, and, for my part, I deprecate "fancy" soaps, often highly-scented and highly-coloured, and absolutely inefficacious for our purpose. Having now made all your preparations for the most important "wash" in our lives, put the hot water into the bath (you can add the cold as you want it), and fetch your little patient for his first introduction to soap and water; and we will begin our task of washing and dressing him.

CHAPTER II.

DUTIES AT BIRTH.

SKILFUL HANDLING OF INFANT—A GOOD NURSING LAP—
 POSITION OF INFANT FOR WASHING AND DRESSING—
 VERNIX—CASEONAM—HOW TO CLEAN OFF—HOW TO BATHE
 AND DRESS NEWLY-BORN INFANTS—HOW TO DRESS THE
 NAVEL CORD—APPLICATION OF THE BELLY BINDER—
 BABY CLOTHES—DESCRIPTION OF—INFANTILE CRYING—
 CAUSES OF—FIRST FEEDING—THE COT, DESCRIPTION
 OF.

THE baby is on the bed in his receiver. How are you going to take him up? This may seem a trivial question to some of my nursing readers, but a great deal goes to it, for one of the most important points in the management of the newly-born is skilful handling, and it marks all the difference between a careless and a good nurse, so we will give a few minutes' attention to the matter. The heaviest, largest, and most sensitive portion of the infant's body is the head, "that crown of all humanity;" and this weighty organ is poised upon a very slender stem—the neck—ill-suited to bear any undue strain upon it; hence to *support the head* is a point of cardinal importance from the beginning to the end of your term of duty. To lift the infant from the bed, place the palm of your left hand under the head (having the receiver between, of course), the palm of your right hand under the buttocks—on no account is our infant to be lifted by the arms or legs, more especially the former.

And here I must again impress upon you the importance of the palm of the hand in our work, the more hollow the better. Place the infant longwise on your left arm. The head will rest on the upper part of it, the rest of the body on the lower arm and left hand. By this method you extemporise a most comfortable sort of cradle—all the babies like it—and free your right hand, which is desirable in many ways. You now carry the infant to the bath,

and take your seat upon your nursing chair, having both your feet straight on the floor, and both your knees *level*. You will never make a good lap unless you carry out these simple instructions. Place the infant on his back straight across your knees—feet towards the fire. This is a rule absolute and ever to be observed. The back of the head rests upon one knee (that farthest from the fire), and the buttocks upon the other, leaving the extremities perfectly free. Most nurses wear a flannel apron when washing the infant, and it is about the best, and you put that on before you fetch him.

We will now begin the washing and cleansing processes, which are often difficult and tedious from the peculiar condition of the newly-born. We commence by wiping out the mouth, placing a portion of the soft, old piece of flannel we shall use throughout over the forefinger of our right hand, after we have dipped it in the bath water. One rinse is enough, as a rule; then cleanse the eyes, closing the lids, and wiping them inwards towards the nose; then wash the rest of the face without soap, and wipe it dry with a soft diaper towel. Then dry your hands on the rough Turkish towel, and commence the cleansing of the infant, which must be done thoroughly.

During the intra-uterine life of the foetus a singular substance is formed over the skin at about the seventh month of gestation, which almost seems to answer as a protection to it. Midwifery writers call it "*vernix caseosa*." I do not think the terms convey altogether a definite idea of the substance, which, if of a "*cheesy*" nature, resembles only that variety of it called "*soft*." The "*vernix*," as we technically call it, exists in more or less quantities upon the skin of the newly-born infant, although in numbers of cases it is perfectly free from it. The quantity of the vernix varies very much in various parts of the body, being least abundant on the scalp and the abdomen. In the forepart of the body it is most frequently found under the axillæ, in the flexures of the arms, under the neck, and all over the ears, but rarely on the face. It lies thickest of all on the back of the infant, also between the joints of the legs and even toes, and over the buttocks, the shoulders, and nape of the neck. There is little on the head, and in that situation it is

always difficult to remove. Be the "vernix" where it may, or the quantity what it may, our first duty is to remove it from the skin before *wetting it*. If you neglect this point you will never get your baby properly clean. To clean off the vernix we shall require a lubricant, such as cold cream or vaseline. I recommend the latter, but it is not a matter of much consequence. We apply it about the forepart of the body first, and, taking an abundant quantity on the forefinger, we plentifully smear it over the vernix, wherever it may be, especially under the axillæ and between the groins, round the neck, and over the ears if necessary. Leave the vaseline there, and then turn the baby on to his face. To do this, place the palm of your hand below the breast, over the abdomen, and roll the infant over. No pulling at arms or legs, remember! Put the infant across your knees, the arms straight over one of your thighs beside the head, the face being exposed to the air, the legs over the side of your other thigh, and straight down. Be careful to place your infant in this position; he is perfectly safe and easy to get at. You will find, as I have just said, that the "vernix" often lies in thick layers along the dorsal column; in fact, we have to scrape it off with our round-ended scissors after dipping them in hot water, which is often the occasion for a perennial joke—that baby is having his first shave! Wipe your scissors clean at once after you have finished, or the vernix will stick to them for days, and then plentifully lubricate the skin with the vaseline, applying it wherever necessary.

We have now to clean off the lubricant and vernix from the skin. We do this with a piece of new dry flannel. I always use the corners of the receiver for this purpose, for we never use it again, and flannel is preferable to rag, and rubs off the vernix better than anything I know of. Before we turn our baby over again, we will begin the washing. We must first raise the temperature of the water to 106 deg.; the first bath must be a hot bath, for you can well understand that, having fatty substances to free from the skin, a tepid bath would be of no avail. You do not often have a thermometer at hand, but a very good and safe guide is your own hand. Place it palm *upwards* at the bottom of the bath, allowing it to remain immersed under the water

for several seconds; if you can comfortably hold it there, the temperature is safe for the infant's bath. Take your flannel and wring it out of the water; soap it all over well, and gently squeeze it dry, so as not to slop the water about. You begin at the top of the head, which is the dirtiest part of the body, and hence requires to be thoroughly well washed; working in a *downward* direction, you wash the neck, arms, shoulders, back, buttocks, and legs, using the soap plentifully.

You must now turn the infant again on to his back; do this by the shoulders, placing your hands flat over them, and, holding down the arms, roll the infant towards you. Wipe your hands dry, and proceed to remove the vernix and vaseline from the fore part of the body. Working in a downward direction, you raise the chin to wipe the neck, then either arm to clear the axillæ; then, pressing either thigh gently backward, cleanse the groins, the knees, and wherever else the vernix may be. Now resume the washing, soaping and wringing your flannel as before; put the palm of your left hand under the back of the infant's head, and raise it up; thus supported, wash the top of the head and forehead, taking care that the soap does not get into the eyes nor on the face. You need not dry the head, as baby has not yet been placed in the bath. Raise the chin and lubricate the neck and ears; under the arms, and then the arms; to do these, gently press them back, observing the natural flexure of the joints. Never forget this. The chest, abdomen, thighs, and legs in succession, the groins to be soaped with the same precautions as in cleansing them.

The feet and hands do not, as a rule, require to be soaped, they can be washed in the bath into which the infant has now to be placed. Place your left hand under the shoulders, so that the back of the head rests on your forearm, and raising the feet with your right hand, place the infant on his back at the bottom of the bath, the water in which covers the shoulders. Have handy and warm, two soft Turkish towels. Taking your flannel, from which you have wrung out the soap, rinse the head thoroughly and the chest, all the time supporting the infant on your left hand and arm. This done, turn the infant over in the bath. To do this

place the palm of your right hand over the abdomen (below the breast, remember), and turn the baby face downwards on to your left arm and hand, placing the latter well over the genitals, so that they rest in the hollow of it and are not pressed into by the fingers, and, raising the infant for a second or two, place him with your right hand into a sitting position, the chin resting on your left hand. This simple manoeuvre requires practice to do it with dexterity, but when you know how it ought to be done, you soon acquire the knack; it is the safest way I know of. With your right hand you bathe the back of the head and the shoulders; you then lift the baby from the bath, placing him on your left hand and arm in the way I have just described to you, and holding the feet in your right hand, place the infant on his belly on to the warm Turkish towel put across your knees for that purpose when you removed the receiver. By this means you avoid all chilling to the abdomen and genitals—it is a rule *absolute*, and must be observed all the time you are on duty—the arms are over one of your thighs, the legs the other, the face free to the air. Now place the second warm Turkish towel all over the infant, and, wiping your hands quite dry, proceed to dry the infant. By the plan I have pointed out it is almost done for you, as the water is quickly sopped up by the two towels, more especially the under one.

I must digress just to earnestly impress upon my young nursing readers the importance of the measures we have just discussed. From careless inattention to them infants often catch serious chill after bathing; the cardinal point is to protect the *abdomen*, the tenderest part of the infant, from cold. You take him from a warm bath, and you must keep him warm. You wipe the infant dry with the top Turkish towel—you can do this without removing it—beginning at the top of the head. Dry the shoulders, back of the neck, and behind the ears, arms, and hands. To do these properly requires a little extra care. Say we shall begin with the infant's right arm; placing our right hand *under* the elbow, we gently place it between a fold of the Turkish towel, and wipe it dry, and then opening the palm of the hand put a corner of towel in it, squeeze it dry, the baby always helping us by clutching at the towel on his own responsibility, and

doing the work almost by himself. We proceed in the same way with the other arm, only we use our *left* for the purpose, remembering always to wipe the hands and arms dry whilst the infant lies *face downwards*.

I have seen nurses waste no end of time in trying to wipe infant's hands like a child's, and not half done them then. The upper extremities done, do the back, buttocks and legs in succession; to wipe the feet squeeze them in a corner of the towel, much as you did the hands. You can dust a little powder over the back part of the body, and taking a soft diaper towel, quite warm, remove the top Turkish towel, and also the bottom one; turn the baby over on to his back, in the way I have just told you; raise the head in the palm of your left hand, and wipe the top all over with the Turkish towel; take another soft diaper towel and carefully wipe the face, neck, chest and abdomen, under the arm-pits, and in the folds of the arms; then the groins, thighs, and knees. I always use a soft towel for the front part of the body and genitals; when dried you dust under the axillæ, between the groins, and in the flexures of the limbs with the finely-powdered starch, and the first washing and bathing is over. Keep the abdomen and genitals covered over with the soft towel whilst you prepare to dress our little patient.

Our next duty is to attend to that portion of the funis left attached to the umbilicus. And the proper treatment of the navel-string, as it is commonly called, is a matter of much importance in the newly-born. Our first care is to prevent the risk of the umbilical hæmorrhage that sometimes takes place after separation, and to this end we apply a second ligature on the *umbilical* side of the first. To do this, make a perfectly straight loop with your thread, and, taking both the ends between the thumb and forefinger of both hands, tighten the ligature as firmly as possible; never *twist* the loop of your thread, if you do your ligature is not really secure. The next point is to squeeze all the blood remaining in the vessels of the cord, at its open end so to avoid as much as possible any oozing from them. Now what becomes of this remnant of the foetal appendage, its functions being, as we know, purely intra-uterine? This is a matter of much interest in Obstetric Nursing. Like

every other organ cut off from nutrition, a process of atrophy sets in; the sheath withers, and after a while drops off from the umbilicus. Now to aid this exfoliation is the object of all we are going to do to the cord. The time that elapses from birth until this process is complete varies. The shortest period in my experience is forty-eight hours; the longest, eight or nine days. But nominally the fifth or sixth day sees the umbilicus cleared.

We guard against umbilical hæmorrhage by placing a *second* ligature *above* the first: our next care is to keep the cord *straight* to prevent any dragging from the umbilicus, which is a tender part, and to keep it *dry*, which aids shedding. For these purposes we enclose it in a piece of linen rag, which must be *longer* than the cord by about an inch at each end; with regard to width, you will find four inches about sufficient. At the lower end of the rag—that which is to be close to the umbilicus—and in the middle, you make a *vertical* slit about two inches long, and another on *one* side, only at right angles to it—*i.e.*, in a lateral direction—to the extent of an inch or an inch and a half. Taking the cord, place it *straight up* over the abdomen, and passing the rag *under* it, and well round the umbilicus, which the slits you have made in it will enable you to do perfectly well; powder the cord with your dust bag from top to bottom; fold the rag first *longwise* on each side, and then the two ends of it well under towards the abdomen. These little pads, as it were, protect it from irritation when the cord begins to dry up and get hard. The ends we aim at are to keep it (the cord) *straight*, to avoid dragging from the navel, and to keep it as *dry* as we can to prevent fœtor. Some nurses use a special powder for the navel cord, made up of one part oxide of zinc to two parts of starch powder, as being more desiccating in its properties, but I do not recommend it. The less mineral substances we use the better, and I have never known the simpler preparation fail to *begin with*. When we come to a dressing for the umbilical scar we will revert to this matter. Having dressed the navel, as we call it, in order to keep everything in its place we must apply the flannel belly-binder.

There is no point of duty to the newly-born of more

importance than this simple appliance, and its proper adjustment is a mark of good nursing. It seems so easy (?) that not one nurse in twenty ever learns or *tries* to do it right; and I must ask my nursing readers to thoughtfully follow my instructions, for it is just this want of observation that leads to failure. You have your baby's binder then folded and rolled up ready to hand in your basket; take it up in your right hand, and unfolding a *small* portion of the binder lay it over the abdomen and cord, placing it just *above* the hips, and just *below* the breasts—never forget this. The infant is, of course, on his back, *straight* across your knees; place the palm of your *left* hand under his shoulders, and turn him over on to your *right* arm; then take the rolled binder from your *right* hand into your *left*, and pass it smoothly over the back; again receiving the binder in your *right* hand, lay the infant down for a few seconds, whilst you draw the binder *firmly* over the belly; repeat the manœuvre I have just described to you to the end of the binder. By these *simple ambidexter* manipulations you will fix the binder securely and smoothly in position. A little practice will soon enable you to do all this with dexterity and celerity, if you only pay attention to a few simple rules. All that remains to be done now is to sew the ends of the belly-binder together. To do this, begin at the *bottom*, passing the forefinger of your *left* hand under the binder, between it and the belly, so as not to draw the binder *too* tightly over it. Do the same thing when you get to the top of the binder, and be sure to bring both ends of the binder *level* at the top, and sew them firmly together, and I venture to say that your binder will never be found at the baby's heels on the following morning.

We must now begin to put our baby's clothes on; and I will describe and criticise each article one by one as well as its adjustment, and you will find the midwife more *en evidence* than the nurse; for I distinctly demur to many of the glories of the *layette*, so dear to the heart of nurses, and the uncompromising objections I shall have to take to the aforesaid are taken from the standpoint of the health and comfort of my dear little patient rather than his *appearance*—not but that we mean to make him “smart” in

due time ; but we shall not be in a hurry about it till he is christened.

The first point is to place your baby ; he must lie straight on his belly, lying across your knees on the warm flannel apron we have kept dry for him with the Turkish towel, his feet towards the fire. This must be a comfortable position for him, because he is *always good* in it ; the "row" begins when we turn him over. The first garment we put on is the shirt—generally made of French cambric or fine lawn, and trimmed with narrow Valenciennes lace. The little sleeves are of varying patterns, and still more "aggravating" sizes—some almost large enough to go over his head, some so small we cannot get them to clear the elbows, if the arms are at all chubby (and babies are fat sometimes, especially if the shirts are small), and our basket-scissors have to be called into requisition, and the sleeves cut. The two shapes most usually adopted for infants' shirts are the immemorial "flapped," and what we will call the straight cut shirt, slightly shaped out round the neck ; both sorts of course open in the front. Now it is to this well-beloved (by the layette vendors) flap-shirt that I object. The aforesaid "flaps" are turned over and pinned (high treason!) or sewn on the long flannel, hence the shirt is of no use or comfort to the chest and shoulders of the newly-born, a part of the body it is of the highest consequence to cover and keep warm. The high shirt (flapless) protects both, so we will decide to use it for our baby. Put it on as he lies across your knees ; place it over the shoulders, and, gently raising the arm, draw the sleeves over them—you proceed the same way with the flap-shirt. If the shirt is long turn it up to a level with the lower end of the belly-binder.

We must now place but not *secure* the napkin ; they are for the most part made of diaper, sometimes of satin-like fineness—about the *worst* we can have, they so soon get wet. and are cold and clinging ; a commoner kind of diaper with a mixture of cotton is better to my mind, especially when it has been made soft by *repeated* washings. For newly-born infants I prefer *old* soft diapers to anything else, but we sometimes have to put up with the "horrors" of *new* material. A great deal goes to size : some are so large as

to be clumsy; some so small as to be ineffective. Taking a fair average, I find the diaper should be one yard long and seventeen inches wide. This folded in half, and again crosswise, shawl fashion, makes a useful sized napkin for newly-born infants. Folded as last stated, you place it over the buttocks, and tuck the upper portion of napkin for about an inch under the *lower end of the belly-binder*. Do not forget this, as it serves to keep the binder clean, and avoids the necessity for changing it. I will revert to the final adjustment of this napkin further on, when we have to turn our baby over; and in the meantime go on with the next garment—the all-important long flannel, which should, under all circumstances, be *open* down the front.

And here a feeling comes over me akin to despair. How can my pen ever describe all I have seen and “suffered” with respect to this article of infantile attire? How can it depict the multiple forms, the bewildering complications, the utterly incomprehensible arrangements of buttons, strings, tapes, loops, and “tabs” that appear to answer no known purpose? And, crowning aggravation of all, the precious garment never fits, in spite of all these abortive but well-meaning attempts to bring that consummation about. The long flannel, as a rule, is beautifully made, and the amount of patient care bestowed upon the needlework of it excites my entire admiration. Sometimes it is made of the finest Saxony flannel, which I object to, and prefer the very finest Welsh, at from two shillings and sixpence to three shillings or more a yard. There is more warmth and comfort in it than the finer sorts. Some of the long flannels are attached to a calico or linen band about half a yard or more long, an arrangement I distinctly object to. My readers may plainly see I am in a grumbling frame of mind. Well, I have not half done grumbling yet. What will the layette people say to me for demolishing so many of their cherished baby-clothes ideas? It was only in quite recent days that I had the good fortune to get emancipated from the tyranny of their long flannel, and got hold of an article that appears to me to be all that is required for infant warmth and comfort—the Scotch barrow-coat, which I came across when I was attending a Scotch woman, and I will endeavour to describe it to you.

You will require from three-quarters to a yard of fine new Welsh flannel; fold it in half, longwise, the open sides forming the front, which of course will be left open; in the middle of the back fold a box pleat about two or three inches wide. You have now to fashion the armholes and sleeves, which you do by cutting a slit about three inches long on each side of the flannel at the top, and then joining up the two open sides of the slit to about two inches, just sloping it slightly to fit the top of the arms. The garment must be shaped round the neck something like a pinafore, and a runner made of the silk ferret that binds it round, into which we run a narrow piece of white sarcenet ribbon. Just below the armhole, and the whole width of the garment, we make another runner, to hold another piece of ribbon to go round the waist. The little coat must be bound all round with silk ferret, also the armholes, and strings or buttons put on to fasten it down the front.

From this brief description my nursing readers can understand that this little barrow-coat* is comfort and simplicity itself. It protects the *shoulders, chest, and arms* of the infant, which the routine "long flannel" does *not*, and it is a matter of the highest importance that these parts should be protected. By means of our runners and ribbons we can fit the "coat" round the neck and waist to any sized "baby," which does away with a constant source of "worriment" to poor "monthlies." A straight shirt must be worn with the barrow-coat—we do not require "flaps," as they would distinctly embarrass us. You put on the garment as baby lies face downwards across your knees, putting first one arm and then the other into the armholes, *always* remembering to raise the arm by placing your hand *under* the elbows, and passing the hands into the sleeves of the flannel. Having now placed the shirt, the napkin, and the flannel, you must turn baby over on his back, in the way I have directed you, and proceed to adjust those articles. The front of the shirt will have to be folded over the

* I am not quite sure of my etymology with respect to the word barrow-coat, having never seen it in print, and writing it as pronounced. Perhaps some of my women readers could put me right—if I am wrong.

abdomen, and, if too long, turned up an inch or two. We must next fasten up the napkin; and I must ask your attention to what I am going to tell you about this simple manipulation, for, like "baby binding," it is so easy that numbers of nurses never learn to do it properly.

The first step, as I have just told you, is to pass the upper part of the napkin well *under* the belly-binder as the infant lies face downwards across your knees; when he is turned over on to his back: take the inner fold of the napkin in your left hand, and pass it well, but not too *tightly*, over the genitals, and hold it there, whilst with your right hand you draw the upper side of the napkin firmly over the *top* of one hip, tucking the ends under the buttock; pass the folds to your left hand, to be held there whilst you do the same with the other side of the napkin; and, lastly, taking the outer and lower end of the napkin, place it over the other folds held in your left hand; pin them all firmly together with your right, and never loose your *left hand* until this is done; and I venture to assert that the integrity of your baby's garment will be quite unimpeachable. What sort of pin shall we use to fasten on with? For my part I prefer a long straight pin—one of our ordinary binding pins, in short—to the so-called "safeties;" for the real "safety" consists in how you place your pin, not in that article itself; and when you put it in position, pin on *to your own fingers*, so that in the event of any "pin-sticking" carelessness it is the nurse that finds it out, not the baby. Darn your straight pin well in and out, and bury the point in the many folds of the napkin, and you need have no fear as to where it has gone to. Numbers of nurses prefer safety-pins; the objection I have to them is that they so often belie their name. The pin slips from the cap (especially in badly-made ones), and the point sticks out; and I have seen poor babies' thighs scratched and dug into by that wretched "safety," that *won't fall out*, as a straight pin would, supposing it were carelessly put in. So I recommend straight pins as being easier to put in, and easier still to *take out*.

Having dwelt somewhat tediously, I fear, upon the adjustment of baby's napkin, we will say a few words about "changing" the same; and when you consider how frequently this has to be done, you may as well learn to do it carefully.

and not in the routine and reprehensible fashion in which it is but too often gone through by allowing the infant's head to *hang downwards* during the process? When you unfasten the soiled napkin the infant lies across your knees on his back—his head *resting on one of your* thighs (that farthest from the fire). Holding the two feet in your left hand, *slightly* raise the buttocks and remove the napkin, placing a portion of a soft diaper towel under them; wash the genitals, thighs, and fore-part of the legs with a flannel and warm soap and water, wipe them dry, and dust. Now turn baby *on to his face*. Turn up the gown and flannel, and wash the buttocks and *back* part of the legs; dry and powder them, and apply the clean napkin as baby now lies, and in the way I told you, tucking the edge of it under the belly-binder. Turn back the clothes, and *turn baby over* on to his back, and fasten up the napkin; change in this way during your term of duty.

The more common mode of procedure is this: the infant lies on his back; to remove the napkin the buttocks are raised *high up* by the feet, and the washing of them goes on in this posture. The infant's head being heavy, slips over the nurse's thigh, and, unobserved by her, falls into a *vertical* position, the hand and face being suffused with a crimson flush (I have seen them purple), and by the time the "operation" is over, the infant is indulging in a crying, or sometimes a screaming, fit. I have witnessed this kind of thing in the hands of nurses and mothers hundreds of times, and never fail to condemn such thoughtlessness. When we reflect that this "topsy-turvy" measure takes place eight or nine times a day, can we admit it as "good" for the baby? If he could tell us what he *felt*, and how his poor head must ache, *he might* get redress for his wrongs. As careful nurses, then, let us avoid inflicting misery upon our little charge when it comes to the necessary "changing." In addition to the napkin, there is generally placed over it what is commonly called a pilch, made out of a half-square of flannel, sometimes set into a narrow calico band, but more often not. The pilch is bound all round with ferret, and has two strings at the top on each side, and a large loop at the bottom corner to fasten it up by passing one of the strings through it. The object of this contrivance is to keep baby dry and warm; and so far so well. But there is a

form of pilch to which I take the strongest objection—the *waterproof* pilch—often used, it is true, for the newly-born, but I deprecate it for infants' use at all—it *retains* instead of absorbing the moisture, makes the parts hot; and, if kept on too long, which often happens, leads to chafing and tenderness by keeping in the heat of the body, and leading to a liability to chilling, which is as injurious to infants as to mothers. The indiarubber pilch certainly keeps the baby's clothes dry, but it does not keep him dry; it also keeps nurse's clothes dry, but her waterproof alpaca apron answers the same purpose, and this also should have a flannel one *over* it when she is bathing or changing baby. Frequent changing is the best and safest plan for the infant, and hence it is, as I have shown you, the right method of so doing.

There is yet another garment we have to discuss, though I trust it is fast becoming obsolete in England, the roller, or "swath," as it is sometimes called, made of calico, about four inches in width, and varying in length from one yard and a-half to three yards long, and wound round and round baby for its whole length. Some years ago I used to attend Jewish women—mostly Germans and Poles—refugees, in fact; and it was among them that I came across those remarkably long rollers. I used to give great offence by objecting to their use, oftentimes declining to put them on to the babies at all. The object of this bandaging was said to be a *protection* to the infant when handling him; but we know now that the best protection is *careful handling*. Medical men wisely and unhesitatingly denounce the swath as being injurious instead of beneficial—it compresses the thorax and impedes the free action of the respiratory muscles.

Still, the "roller" has held its own for a very long time, and many mothers will use it even now, especially those who care not to learn how to handle their babies. In Germany I have heard the infant is carried about on a pillow—a very wise plan; but if a nurse pays careful attention to the rules I have given in the matter of handling her little patient, he may do without a pillow.

In comparatively recent days long petticoats made of fine calico were provided, to put on over the flannel; they were sleeveless, low in the neck, and fastened with narrow tape

let into two runners, one for the neck and one for the waist, I believe this garment is almost disused, except perhaps in rural districts. I do not see the need of it myself, and only put it on in deference to maternal wishes, as I do the baby woollen socks we sometimes have to put on the tiny feet; they are not necessary, as we turn up the long flannel over them; furthermore they *will* one or both drop off—"it's a little way they have"—also they are apt to get wet and spoiled. There is another word I would say about baby socks, they should *always* be made of *white* wool; dyes are apt to be injurious to baby feet, more especially those of brilliant hue, the aniline reds and blues for instance. The last garment we shall have to put on is the gown; there are two kinds of them, the long frock or the night gown; it is to the first mentioned that I will first direct your attention.

Time would fail me were I to describe to my readers the woe, the misery, the suffering, nay, even death itself, that has been inflicted upon hapless infancy by that insensate garment! It consists of two parts, a body and a long skirt, the latter is made of fine cambric, the former of lace and insertion, it is *low* in the neck and *short* in the sleeves, which maternal folly will oftentimes insist upon having *tied up* with *coloured* ribbons. This objectionable robe or long frock is of course put over the conventional long flannel, and I think my nursing readers will agree with the writer that "the force of folly" can no further go, as regards the dressing of our newly-born. They can plainly see that the robe leaves the shoulders, neck, arms, axillæ, and even the chest walls (these two last are *very* sensitive parts of the infantile frame) exposed to chill. A renowned French physician years ago pointed out that lung inflammation might be brought on by this reckless exposure, and even asserted that the familiar "thrush" might be induced by it. I am perfectly aware that this garment we are now discussing has years ago been abandoned by the upper and more enlightened classes of the community, but I also know and regret that it is still very largely in favour with thousands of working men's wives, and as my pen is given to the welfare of infancy, class or caste has no place in its regard. I have steadfastly opposed the use of this baby garment during my whole period of work, especially amongst my humbler

patients, and I believe with a fair measure of success. I earnestly advise all women engaged in midwifery nursing to carry on the crusade against this senseless garment, which will, I hope and believe, soon become obsolete as far as the newly-born are concerned.

We will decide then for the night gown, which is usually made of fine Indian longcloth, perfectly free from "dress," cut all in one, high in the neck, sometimes shaped out and fastened with buttons and loops; but on the whole I prefer a narrow tape, put in a runner to begin with, as we can adjust it better to the size of our baby, for we must ever have in mind that newly-born babies are not all of a size; hence we require adjustable rather than fixed arrangements in the garments. The sleeves, of course, are long, with little turn-back cuffs, the gown is caught in at the waist with a band of insertion, and tied behind with long calico strings. We will now put the gown on the baby; lying on his back across your knees, raise him by the shoulders with your left hand, and pass the gown over his head and down to the waist with your right hand. Lay baby down again, and carefully pass the arms, lifting by the elbows, into the sleeves; in doing this be careful not to catch the thumbs in the cuffs, which sometimes run small. Having adjusted the sleeves, turn the baby on to his face, and fasten the gown round the neck and waist; then again on his back, and adjust the gown in the front, and you may consider you have completed the process of washing and dressing your little patient for the first time in his existence. There is yet another point I will touch upon—what, if any, head-gear?

I need scarcely remind my nursing readers that in the days of their mothers or grandmothers no baby was considered *dressed* without a cap of some sort, and it is to the doctors that the extinction of that treasured article—in maternal eyes—of baby's toilet is due; and in those past days nothing more marked out social distinction than the caps; they ranged from softest, choicest, nay, almost priceless lace, to materials of humblest kind. I have seen them made of flannel, and, *worst* of all, *linen*, with cambric frills round the front—a sort of miniature "Mrs. Caudle" article. These two last were perfectly indefensible; but with respect to the first I confess to a little weak-minded leaning. It was soft,

light, and porous; it was trimmed with a border of lace round the front, and in that, at intervals, were placed loops of very narrow pearl-edged satin ribbon, either white, pale pink, or pale blue, and the cap was tied on with strings of the same. Times are altered now, and nurses do not have babies' caps to add to their difficulties—they have enough to do to attend to their own. There is yet another head-covering to which the most uncompromising of doctors can offer no objection—the soft, silky, curly, baby hair provided by Dame Nature's matchless hand, and never more bounteously than amongst those of her children who are not born to "Mechlin." In our days we cover over our baby's head with what is called a "square," made of softest, finest flannel, and generally embroidered all round with silk. I strongly advise that the flannel and the silk should both be white in preference to coloured; but, if coloured, scarlet, embroidered with white, or ingrained crimson silk, is to be preferred: other dyes I deem doubtful.

At this point we will say a few words upon one of the troubles of Obstetric Nursing as regards our little patient—crying. My nursing readers well know that our little friend has not gone through all the manipulations I have so recently described to you without a protest in the way of "cries." Now, these often completely baffle a young beginner in our portion of work, and none more than our hospital sisters who have temporarily or permanently joined our ranks. Her trembling fingers giving, I presume, a sense of insecurity to her little charge, he redoubles his efforts. Tears often fill his nurse's eyes, and she seems as though she felt a *personal* responsibility for all the vigorous cries that issue from baby's mouth. Time and experience alone can overcome this little nervousness, and then nurse will be able to calmly pursue her duties in the midst of liveliest "sounds."

Why do babies cry? and what, if any, importance is to be attached to "cries"?

The three most usual causes for infant crying are cold, hunger, and pain. The first occurs at the moment of birth, when the infant leaves a temperature of ninety-eight degrees or one of twenty degrees, more or less, lower, which induces that first inspiratory act of such infinite importance to infantile existence; hence we may say that, in a measure, cries

caused by cold are salutary ; but after the establishment of the pulmonary circulation, our baby must be kept warm, wrapped in his flannel receiver, and placed under the bed-clothes until you are at liberty to attend to him. What do we notice next ? He is looking about him, and engaged in the practical process of finding his way to his mouth, into which he has inserted his fingers or his fist. *Some* babies—the clever (?) ones—suck their thumbs in the most amusing way. “Cries” have ceased, and hence we may infer that a feeling of cold has given way to a sensation of hunger ; and, after the washing and dressing is over, we attend to this need. I make it an invariable practice after these duties are done to pass my little finger, bulb upwards, well into the infant’s mouth—firstly to see that the roof is intact, and whether no cleft palate is present ; secondly, to test his suctorial powers and be guided accordingly. If he displays talent (?) in that direction by vigorously sucking my finger, I come to the conclusion he would prefer something better, and decide to feed him ; if, on the contrary, he is unable or unwilling to suck, and more disposed for slumber, I prefer to place him in his cot at once, for the chances are he would eject whatever you gave him. We find, then, that cries from cold and hunger can be appeased by warmth and food ; cries from pain are not so easily soothed. We generally find that *pain* brings *tears* to baby’s eyes, but cries from the other two causes do not—hence we may ask, why do the newly-born suffer pain ? The cause is to be found in circumstances connected with birth, notably intense cranial pressure, either with or without instrumental aid. There are few of us who really realise the ordeal of birth. An eminent living physician writes : “ Subjected at birth to what would be, in the after conscious state, an ordeal to which the most cruel of deaths were not possibly more severe, the infant sleeps through the process,” and only awakens to *pain* as he awakens to consciousness ; and our little patient begins life with pain that neither food nor warmth alleviates, and sometimes he cries piteously for twenty-four hours or more, and in extreme cases dies in convulsions from exhaustion. There are other congenital troubles that cause pain, but we will not dwell on them now, as I intend to pursue in the infantile portion of my subject

the same plan as in the maternal—viz., to discuss the normal conditions of infant life first, and the many deviations from those conditions subsequently.

We decide, then, to feed our infant before placing him in his cot. *What* food shall we give, and *how* shall we give it? For my part, I prefer to give cream, diluted with hot water, and slightly sweetened with powdered loaf-sugar, one good teaspoonful of the former to that of the latter. I find this lighter on the stomach and more heat supporting than diluted milk—the point in infantile life is to maintain the circulation, which is enormously rapid, heat is rapidly generated, and combustion must be maintained. I will not discuss the subject of feeding now, as it will form the subject of a future chapter; I am simply giving you *ad interim* instructions that hold good for the *newly-born* in almost all cases—two, or at the most *three* teaspoonfuls will be sufficient; if more is given it is generally ejected, and makes the infant grow wet and dirty. How shall we administer this nourishment? The two most usual methods are by the spoon or the teat. I prefer the latter, but another plan may be adopted (and in very feeble infants we have to use a spoon)—make *sure* that the infant is really *swallowing* what you give him, that it reaches the stomach, and not merely rests in the gullet, to run down the infant's mouth as soon as he is laid to rest in his cot! I have seen infants "crammed" in this kind of way by careless folks, who are quite under the blissful impression that they are feeding them. I have just told you how to test baby's sucking powers; if these are good, his power of deglutition may be pretty safely inferred. The great advantage of "suction" over any other mode of feeding is that it excites a flow of saliva: that is the first process of digestion, and is in strict consonance with the natural method. Infants must be fed with *fluid* nourishment—not gruel or sop, as is but too often done by the ignorant and thoughtless.

I will just bring before my nursing readers a little plan for feeding the newly-born I have found serviceable when we have to give fluids in very small quantities. Take a long-tubed nipple shield, hold the glass end reverse way up, place the teat into the infant's mouth and let him suck it, then pass a teaspoonful of fluid into the glass, and let it drop,

as it were, into the infant's mouth, pressing the tube with your fingers at intervals to *allow him to swallow* what he takes before giving any further supplies; and I would impress upon my nursing readers that in feeding the newly-born *effort* should be in excess of nourishment, instead of the contrary and more frequent procedure of nourishment being given in excess of effort on the infant's part. In acting thus we only take a lesson out of Dame Nature's book, who allows a scanty supply to the infant to *begin* with, and that only obtainable after commendable efforts. It appears to me to be so often overlooked by nurses and other women, that it is not the fluid *poured down* baby's throat that is of use to him, but that which is *retained* on the tender infantile stomach. I use the nipple shield plan for a day or two, until the infant takes to the breast or the bottle permanently. We can tell by it how much food he takes at a time, and I prefer it to spoon-feeding, and bottles are too large. Many medical authorities deprecate feeding newly-born infants at all, on the ground that food is not required by them. Nurses and mothers hold different opinions, and know that multitudes of infants cry for food soon after birth, and are only pacified by it, and it is not unreasonable to infer there may be some sensation of hunger that has to be appeased; besides which the ordeal of birth, bathing, and dressing make some demands upon their tender vital powers, and they cannot live on air. When an infant declines food, never force it on him: wait until he asks (?) for it by cries. Our next care is to place our baby to rest in his cot. I do not advise this to be done immediately after feeding, and if nurse has ten or fifteen minutes to spare, she can cradle baby comfortably on her left arm and hand; if he be a vigorous baby he appears to enjoy looking about him, and his nurse is not unwilling to indulge this natural desire, as it gives her an opportunity of observing if he is able to keep the food down you have given him, before laying him in his cot.

We will give a few words to our baby-cot, the descendant of the historic cradle that painters have loved to introduce into their scenes of cottage life and humble homes, and poets have turned into a symbol of repose in the word "cradled." From the cradle to the grave marks out the

span of human life. The old English cradle was made of wood, mostly oak, long, and rather narrow in shape, with a hood to it, and fixed on large rockers. I have seen numbers of these clumsy-looking cradles in rural districts. Then there was the large wicker cradle, also hooded, and fixed on rockers. After the wicker cradle came the more modern bassinette, also wicker, which was upholstered in white muslin, over coloured glazed calico, and matched the basket; this, too, was on rockers. Then there was the cot which, like the cap, marked social distinction. It was made of costly woods, carved, and oftentimes gilded; of artistic form and canopied with lace, sometimes surmounted by a figure representing the guardian angel of the slumbering babe, or that symbol of mundane distinction, the coronet. I confess to a leaning towards an artistic and beautiful cot; but we will eliminate the strawberry leaves! The cot of humble homes was mostly made of wood, generally mahogany, and cane, long and narrow in shape; the two sides, ends, and bottoms were made of cane, like chair-seats. This cot was also swung from a frame that ran on castors; at the head part was a support from which curtains could be hung. Now we come to our modern metallic cot, made of brass or iron, enamelled, and gilt; they are often very handsome, and about the best for our baby. They, too, are swung from a frame, and have a support at the head for curtains. In form the modern cot is much the shape of those we have described.

The cot bedding should consist of a horse-hair mattress of the *very* best quality, and a small down pillow. Sometimes a down bed is supplied, but in my judgment it is not necessary. For cot clothes, one under blanket and two upper of softest, finest Witney; for sheeting I prefer the *finest twilled calico* to linen, the pillow cases to be made of the same material; they are generally frilled all round with lace and cambric. For coverlet there is nothing prettier to my mind than the knitted or crochet ones, made of wool by loving hands for the occasion, white or coloured. I do not consider a lower sheet necessary, preferring to let baby lie on the under blanket, nor do we require any waterproof sheeting to *begin with*, a piece of Southall's absorbent sheeting will be sufficient to keep the bedding dry and baby warm.

There is another appendage to the cot I should advise being obtained *beforehand*, viz., a small tin foot warmer, or, shall we say, *cot warmer*? the same shape in miniature as the one I described to you for maternal use; it will have to be made to order. You may ask, Why warm the cot? Because, when necessary, it is better to raise the temperature of the cot than to crowd clothes upon the infant, for we must remember it is the *baby* that has to warm the clothes to begin with, not the clothes the baby, and in very inclement and cold weather, or under feeble conditions of infantile life, the infant has not sufficient animal heat to spare to maintain the warmth of his body, and if we give artificial heat we come to his assistance in time of need. I have reason to believe that many a frail little life has been preserved by this simple provision, and many and all comforted. It is surprising how infants grow when they are kept warm by artificial heat; it promotes sleep, and food nourishes them better.

CHAPTER III.

DUTIES AFTER BIRTH.

HOW TO PLACE INFANT IN THE COT—SLEEP NOT USUAL IN THE NEWLY-BORN—THE MECONIUM—NATURE OF—VOMITING—FLATULENCY—TREATMENT OF THE CRANIUM IN INFANCY—TUMOUR OF THE SCALP—ROUTINE DUTIES FOR THE NEWLY-BORN—NAVEL DRESSING—UMBILICAL HÆMORRHAGE—TREATMENT OF EXFOLIATION OF THE CORD—"WEeping" OF THE UMBILICAL SCAR—"POUCHING" OF THE Navel—MANAGEMENT OF—TUNESCENCE OF BREASTS, CARE OF—"SORE EYES," PREVENTION OF—TREATMENT OF INFANTILE OPHTHALMIA—OTHER AFFECTIONS OF EYES OF INFANTS—CATARRH—CONGENITAL BLINDNESS.

You have placed baby in his cot; how did you do this? It may seem a simple matter, but a great deal depends upon it. I told you that the head is the heaviest part of the infant's body, poised on a slender neck. One result of this physical fact is that all babies are apt to fall on their faces; they would do so at birth if allowed to have their own way. The thoughtless habit of putting an infant's head on to the edge of a bolster or pillow is much to be deprecated; he slumbers, and the heavy head slides off the pillow, and on to his face baby falls, and, if unperceived, very serious and sometimes *fatal* effects have, to my knowledge, more than once ensued. To avoid this undesirable contingency the infant should be placed almost on his back, and slightly inclined towards the *right* side. The head *should be low*, and well on the pillow, *not at the edge of it*. The pillow should be but *slightly* raised above the mattress. The square should be *loosely* placed over the head and shoulders, the arms left perfectly free; never

pinion them down. When awake, the infant is constantly moving them about, mostly in the direction of his mouth. It is only in slumber that the arms are still; and one of the signs of waking up is that baby first begins to fight with his arms, and then to cry. Observe the directions I have given you the whole time you are on duty, for they are just, if not more, as important last as first.

Infants do not, as a rule, sleep much for the first twelve hours after birth, and have to be watched. Sometimes there is a good deal of crying. Three troubles may also be looked for—vomiting, purging, and flatulency. Soon after birth a bilious vomit, orange colour, is frequently ejected. I suppose it is some of the bile from the liver getting into the stomach. It is a matter of no consequence, unless it persists, when you must tell the doctor of it. Warm bland drink to rinse out the stomach is about all that is required. It is one of the rare occasions on which a few teaspoonfuls of *thin* milk gruel or barley water may be given in the way I have recently mentioned.

Purging.—One of the characteristics of the newly-born is the familiar “black motions,” or meconium, a fanciful name given from its supposed resemblance to the inspissated juice of the poppy. Bile, mixed with the mucous secretion of the intestinal tract, forms the meconium, which is contained in the intestines of the fœtus, and collects in them during the whole period of intra-uterine life. It is a thickish, tenacious, greenish substance. It is voided during birth, immediately after, or some hours may elapse, and in rare instances twenty-four or forty-eight hours may intervene before the first motion is past. These last are unusual intervals, and give rise to some anxiety. This perfectly natural secretion has been, and alas! still is, made the occasion for the most unnecessary and *mischievous* medication at the hands of ignorant and thoughtless women, who have thereby inflicted untold woes upon hapless infancy. The prevailing fallacy being that cleansing (?) measures were called for to free the intestine from the meconium, *purgatives* were resorted to, castor oil being in high favour, combined at times with such *delightful* adjuncts as syrup of rhubarb or buckthorn—worse even than these was *rue*, a bitter, nauseous herb, greatly in favour amongst rural mid-

wives, rubbed up in butter and crammed down baby's throat as though he were a young chick! A palliation of this drastic treatment was found in butter and sugar instead of rue, given in precisely the same manner. A good old-fashioned nurse told me, not long since, that she always gave the babies a teaspoonful (?) of castor oil as soon as they were washed and dressed—it "cleared" them out. I am strongly of opinion a good many of them were "cleared off" by the process! not alone in her hands, but in others of her way of thinking. If meconium is voided at birth, or soon after the bath (which is often the case), that is, before the infant is placed in his cot, there is no need to attend to this matter for some four or five hours, when you will have to change the napkin for the first time, doing this in the way I told you of. You will require *warm* water with a little soap, and a piece of soft flannel to cleanse the buttocks, sometimes the meconium, being very viscid, sticks to the skin, and many nurses have a most reprehensible practice of scratching it off with their finger-nails; the right way is to use a lubricant, either cold cream or vaseline, and it will come off with perfect ease, and no pain to the baby. If the meconium has not been voided at or soon after birth, you must attend to this matter of changing about two hours after the infant has been laid in the cot.

Flatulency.—This familiar trouble of infancy begins soon after birth, and we may say continues during babyhood. We can readily understand why air should collect in the intestinal tube, partly from the passing away of the meconium that partially filled it, and partly from the recumbent position of the infant impeding its escape in a downward direction. The distension of the tender infantile stomach by "wind" causes spasmodic pain, and often symptoms of choking or suffocation occur from pressure on the heart. These temporary troubles are at once relieved by raising the infant up, turning him face *downwards* over your arm, and patting his back. These simple measures aid the escape of air from the stomach, and bring relief to the pressure symptoms. The accumulation of air in the intestine leads to distension of the bowels, and pains, the familiar "gripes," or infantile colic, which has led to measures of relief (?) that to my mind are often more hurtful to the infant than the

initial malady itself, for careless feeding is one of the *causes* of the trouble, and if that cause is *removed*, instead of being temporised with, it would be far better for baby's health; besides which, nurses and mothers are apt to fall into an inveterate habit of "dosing" for the simplest cause, and repeating the error upon every recurrence of the cause, until poor baby's stomach is made a little doctor's shop of—and the "wind" gets in just the same. Position and gentle friction with the *warm* hand over the abdomen is a simple and comforting method of dispersing the air from the intestines, or even the stomach, that rarely fails, and can do no harm. The most commonly resorted to carminatives are dill-water, aniseed, peppermint, and carraway; and these, again, are given indiscriminately, whether the seat of the pain be gastric or intestinal. In the latter case I have found nothing better than ten drops of best pale brandy to two teaspoonfuls of warm water, slightly sweetened; give one teaspoonful at first, and another half-an-hour afterwards.

Whilst upon the subject of infantile ailments, I will just touch upon another that often occurs as soon as baby takes his milk food, whether from breast or bottle, and has been made the occasion for injudicious and injurious "dosing"—acidity of the stomach, which is often nothing more than the result of a natural process of digestion, is at once regarded as a *malady* to be met by baneful alkalies, the most popular being the two forms of magnesia, fluid or in powder. The former is what is called a caustic alkali, and, even when diluted, unfit for the tender infantile stomach. The effect of frequent doses of magnesia, often without the slightest attention to *exactness* as regards *quantity* (which should in all cases be *very* small), is the formation of *concretions* in the digestive tube, from the effect of the acids of the digestive juices. Infants have died from obstructions caused by these hard immovable masses in the small intestine, that have been discovered by *post-mortem*. Bland fluids, such as barley water or thin gruel, in change with milk, will soothe "acidity" better than drugs. If any "corrective" is required, lime-water put to the milk is the safest; the carbonate of lime held in solution in the water is taken into the system and made use of for bone-forming purposes, not hardened into injurious substances.

There is another matter I will just bring before the notice of my young nursing readers whilst we are upon the subject of infant "woes," or rather "wrongs," that may in a measure be called medication. I allude to a practice, happily dying out, but far from dead, and that not so many years ago was very generally adopted, especially by the "Gamps" of our profession, of rubbing the baby's head all over with brandy or whisky, according to the nationality of the "Gamp," as soon as the process of the *first* washing and dressing was over. The pretext for this doubtful manipulation was to *prevent* baby from feeling the cold on his head; rather an odd way to put it, for, as a rule, spirit lotions are considered to cool the head, and used for that purpose. Mothers were as much in earnest as nurses in this "whiskying" baby's head, and that and brandy were liberally supplied for the purpose. The spirit was thus used: the nurse poured a portion of it into the palm of her hand, and rubbed over the *fore* part of the head principally; of course spirit ran into baby's eyes, and gave rise to pain and cries; they were received with approval, as showing strength of lungs! Thousands of infants have been subjected to this treatment, and the baneful practice goes on still. Whilst upon this subject, let us say a few words upon the infantile cranium, which differs in many respects from the adult, and as the care of the head of the infant is an important part of Obstetric Nursing, a little knowledge of it may be of interest and use to my young readers.

The cranium, or brain case, consists of four separate bones, the frontal, the occipital (back), and the two parietal (side bones); there are four other skull bones, the two temporal, the sphenoid, and the ethmoid; but these are of little obstetric interest. During foetal life, the articulations that connect the four cranial bones are soft and loose, permitting a large amount of compression of the head during birth; the articulation that connects the parietal bones is called the sagittal suture. The membranous space, that lies between the frontal and parietal bones is called the "bregma," or anterior fontanelle; the lesser space that marks the articulations of the parietal and frontal bones, is called the posterior fontanelle. At birth these structures are distinctly visible, and as they are more or less developed, we say our

baby has a soft or a hard head ; but under all circumstances the cranial plates are thin and tender, and the head requires the gentlest handling.

Now, we can understand the baneful effect upon those membranous spaces, the fontanelles, especially the anterior one, over which the fiery fluids we have just mentioned were *always* poured, might have upon those delicate structures of the infantile head ; and when it happened to be denuded of hair, which is often the case, still more injurious would they be. There is another peculiarity about the head of the newly-born—viz., soft swellings—mostly between the parietal and occipital bones—commonly called the tumour of the scalp, and is due to cranial pressure during birth. An effusion of fluid into the membranous spaces and œdema to a considerable extent takes place. As a rule the so-called *caput succedaneum* rapidly diminishes by the absorption of the effused fluid. In other cases the tumour persists for some weeks, and may require surgical treatment. There is little for a nurse to do but to carefully avoid *all* pressure, or rubbing of any kind with lotions of any sort, without medical sanction. Unwise meddling with the tumour will be sure to do harm, and possibly make a simple trouble a serious one.

Having made this little digression, we will return to our duties. It may simplify matters if we take them *seriatim*, and start from a given period, and assume that our little patient was born on a Sunday ("the better the day the better the deed!"). There will be but little to do for him except changing (watching for any symptoms that may arise) and feeding. As it is my intention to devote a chapter to that subject we will leave it in abeyance, and go on with our routine work. On the following Monday morning baby must be taken out of his cot to be attended to. Observe strictly the instructions I have given you as to the *right* method of raising the infant from cot or bed. Make your preparations beforehand. You will require a *basin* of warm water, sponge, flannel, soap, your baby's basket, a soft towel, some napkins, and a clean nightdress. Sitting on your chair, you place baby across your knees, feet towards the fire. There is but little to do, for no clothes are to be removed except the nightdress and the

napkin. Our baby is but tender yet. A careful nurse who has properly changed her baby will not have a stain upon the long flannel. The less you do for a few days the better for the baby. Ever remember "fuss" is not care; and in our portion of work, at any rate, the worst of nursing is the nursing that does too much.

To remove the soiled nightdress raise baby up by the shoulders, rest the head on your *right* arm, unfasten the gown with your *left* hand, lay baby down again, take the arms out of the sleeves, raising them by the *elbows*; slightly raise the buttocks by the feet, drawing the gown from under them; loose the feet and take the gown away over them downwards; and all this is to be done as baby lies *on his back* straight across your knees, his head resting on one of your thighs farthest from the fire. Take the sponge, and squeeze it *almost dry* out of the water, which should be *quite* warm, and pass it lightly over the face, and wipe it with the soft towel.

I must particularly impress upon you not to have the sponge too wet, or some of the water from it will trickle down the infant's neck, and, if unperceived, set up chafing.

I have seen poor babies excoriated from this cause: the water has never been wiped off, and getting into the creases of the skin, remains there, and gets hot and irritating.

You now change the napkin, and wash the buttocks and genitals. You do these with soap and *flannel*, rinsing the soap well off, and wiping the parts perfectly dry. Be especially careful to *dry* the groins (and if a male infant, the scrotum), using your soft towel for the purpose, and then powdering the parts when they are wiped dry. Never powder over *wet*; the puff merely completes what the towel has begun, and is *no* substitute for careful wiping. Now put on the clean napkin. In placing the pin, be very careful not to hurt the genitals, especially in male infants. To avoid this risk place the two forefingers of your left hand, palm upwards, between the folds of the napkin and the pins, so that it will be the nurse who *feels* the effects of carelessness—that is pricking—not the baby. I have seen harm come from want of care in this matter, coupled with profound ignorance as to *cause*. Now put on the clean gown in the

way you did at birth, and you have done all you need do for the present.

Before being placed in his cot, baby may require feeding, or putting to the breast. Place the flannel square over his head, and lay him down again, observing the precautions I have so recently brought before you.

The morning duties for *Tuesday* will be precisely the same as *Monday*.

The chief point we have to bear in mind for the first five days of infantile life, or even longer, is the shedding of that small portion of the funis left attached to the umbilicus, and the perfect healing of the umbilical scar.

It is a most important part of Obstetric Nursing to promote these desirable ends, and I must for that reason ask the thoughtful attention of my young nursing readers to all I have to tell them on the subject. For the want of proper care in the management of the navel string, suffering, and oftentimes irreparable mischief, have been inflicted upon the newly-born.

We will regard the matter in the light of simple surgery, You cut your finger rather deeply ; as a matter of course you bind it up ; as a matter of common sense you leave it alone for some days. You don't fidget about the dressings, nor do you expect the wound to heal in a day, nor expose it to the air too soon. You give it *time* to heal. The umbilical scar is not a cut, but a sore that has to heal ; and the funis separates from it by a process of granulation, that may be healthy or unhealthy according to the care bestowed upon it, or unfavourable outside influence.

Amongst the Esquimaux, who live in underground dwellings, the extreme foulness of the atmosphere excites an *erysipelatous* inflammation of the navel that ends fatally to the infant. In the dark, unwholesome tenements of our London slums the same danger menaces the frail infant-life, and at the best leads to a troublesome unhealthy wound.

On the third day from birth—which will be the *Wednesday* of our calendar—we will attend to the navel. It may not be *absolutely* necessary then, but it is wise and expedient, and for the first time we shall have to remove and change the belly-binder, and what is commonly called “dress the

navel." To do this effectually we shall have to bath our baby. You make precisely the same preparations for this as you did at birth, and clean clothes must be put on throughout. You undress the infant in the way I have told you, with as little turning about as possible.

The last garment removed is the binder. Take your sharp-pointed scissors from the basket, and cut the stitches out of it, and pick out the threads; it is a most untidy habit to leave them in that, or any other, of the clothes. Holding the feet with one hand, slightly raise the buttocks, and, with the other, unwind the binder without any further disturbance to the infant. We shall find the funis in the position we placed it—*straight* up over the abdomen. The rag that encloses it may be quite clean, or, which is much more often the case, stained and stiff with the blood that has oozed from open ends of the vessels of the cord. And here I must call the attention of my readers to a very prevalent custom amongst "our incapables" with respect to the dressing of the navel string. Instead of changing the soiled rag, they put another clean rag between the cord and the abdomen, which they first *singe* (*why*, I know not), and follow that up by *tallowing* it, and then replace the binder, and express surprise, when it is again removed, that the "navel looks bad."

Well, then, how shall we change the stiff and dirty rag? By simply washing it off when we have our baby in his bath, which must be given him in precisely the same way as at birth. When he is washed and wiped perfectly dry, you re-dress the navel cord. Put the rag you have soaked off into the fire at once, and apply another in the same way as you did at first. Whilst doing this, you will observe that a great change has taken place in the cord: instead of being round and soft like it was at birth, it has become shrivelled, flat, and stiff; the vessels are distinctly visible, and the ligatures are somewhat loosened; the funis is still firmly adherent to the umbilicus, which sometimes shows signs of what nurses call "festering," and there is often foetor. You use the starch powder freely round the base of the cord before placing the clean rag over it.

The bathing of the infant must be done as quickly as possible, consistently with gentleness and thoroughness, and

the greatest care exercised to avoid chill to the abdomen and genitals, more especially in female infants, and *always* turn the infant face *downwards*, when taken from the bath, on to the *warm*, soft, Turkish towel placed across your lap for that purpose, and then place another one all over the baby from head to foot, and there will be scant chance of chilling. You wipe the back of the head, the shoulders, arms, hands, legs, and feet *before* you turn the infant on to his back; when you do this, pass a soft, *warm* towel between the legs, and cover the genitals and abdomen whilst you wipe dry the other parts of the body. Be very careful to wipe *dry* the creases of the neck, the bends of the arms, and the axillæ, using the powder freely; observe the same precautions with the groins, which are very apt to chafe if neglected.

The washing over, you dress the navel (same as at birth), and put on the flannel belly-binder and the other clothes. The usual effect of these manipulations is of a soothing character to the infant, and, after feeding, he will often sleep for four or five consecutive hours or more when placed in his cot.

At this point I will say a few words about a trouble that sometimes occurs within twenty-four hours from birth, and *after* the infant has been attended to and laid in his cot—umbilical hæmorrhage. The first thought that would naturally occur to us would be that this accident (?) *must* be due to careless ligaturing at birth, and for the most part it may be so, but there are instances when I think the *character* of the cord is a factor in the disaster. Some cords are so firm and resisting that it is difficult to tie down on to the vessels securely; others are so soft and gelatinous that the threads (especially if *glazed*) are apt to cut into the coats of the vessels, and so lead to oozing. The umbilical hæmorrhage resulting from the first-mentioned cause is, as a rule, so profuse as to be soon discovered, and we may fairly conclude that the *surgery* is at fault, and the trouble is promptly remedied. In the latter instance it is not so profuse, and many hours may elapse before the hæmorrhage is discovered; and this is one of the things you must be observant of in the newly-born. Fortunately the signs of mischief are so manifest, that *serious* results from it very

rarely ensue ; still, they *do* result, and infant lives have been lost from severe umbilical hæmorrhage ; and, even if not fatal, the loss of blood is sorely detrimental to infantile health, and I have known more than one instance where it has *never* been recovered. I am anxious to impress these facts upon the mind of my younger readers, because, they may at any time have to deal with this grave emergency.

Supposing that, some hours after the infant has been placed in his cot, you perceive a stain of blood on the front of the gown, raise his clothes as he lies, and if you find the quantity of blood discharged *small, dark* in hue, and getting *stiff*, you may regard the matter as unimportant, in fact, better left alone, and due to a *slight* oozing from the vessels of the *cord*. If, on the contrary, the flow of blood be *profuse, bright* in hue and *wet*, the clothes being quickly saturated with blood, you must *at once* undress the infant and re-tie the cord, for you know that the hæmorrhage is from the umbilical *vein*, that is in direct communication with the infantile vascular system—hence its danger.

Here let me remind you how necessary it is in emergencies like these to be *calm* and prompt. Keep your fears to yourself, and you will be the better able to allay those of others—especially the mother. This is an accident we cannot *always* conceal from her ; and as it naturally excites her apprehensions, it must be her nurse's part to soothe them. There ought to be no need to send for the doctor, as every Nurse who is properly instructed is perfectly able to “tie” and “separate” whenever necessary.

When we have met the complication, let us turn our attention to our baby ! In some cases the infant appears but little affected by the loss of blood, in others very distressful symptoms show themselves—the pallid face, the livid lip, the listless limbs, the coldness of the surface of the skin, show the severity of the hæmorrhage, and restorative measures must be resorted to at once. Except to change the stained navel rag, and apply a fresh belly-binder, which should be put on hot, no further dressing must be attempted until our little patient has revived again. Take the infant close to the fire, place him in your lap over your flannel apron ; have a flannel petticoat, shawl, or anything *woollen*

that may be to hand, and have it made hot, and wrap the infant in it, leaving the face only free; pour a small quantity—a teaspoonful—of warm brandy and water down his throat, repeating the dose every ten minutes, until the circulation is restored, which will be marked by the return of the natural colour to the lips, and warmth to the skin. Make one of your hands warm by the fire, and place it, palm downwards, over the region of the heart, keeping your hand *under* the flannel the while. You can repeat this manipulation until the heart-beats return to their normal frequency. As soon as prudent the infant must be dressed and placed in his cot, which must be warmed in the way I told you. For food, one teaspoonful of cream and one of milk to one tablespoonful of warm water, given in teaspoonfuls every ten or fifteen minutes till the infant sleeps, is about the best nourishment; the brandy need not be continued after the circulation is restored.

A few days after umbilical hæmorrhage the skin often assumes a yellow jaundiced hue; but it soon clears, especially if the infant be breast-fed. Although under most circumstances it is not necessary to summon *immediate* medical aid, the occurrence should always be reported to the doctor as soon as he comes; or, if the infant shows great signs of distress, he must be summoned; but it is *most important* that the nurse should act *promptly* in dealing with the disaster, and the *first* duty is to re-ligature the cord. I have never known a case of umbilical hæmorrhage terminate fatally that was dealt with *at once*.

There is another and rarer form of umbilical hæmorrhage, that takes place some days, or even weeks, after the exfoliation of the cord—it comes on without any warning or pain. Nurse, for instance, takes up the infant to change him, and finds the clothes and napkin soaked in blood. Medical aid must be summoned at once, the infant undressed, and firm pressure made over the navel, with a compress of lint or cotton-wool, steeped in cold water, and kept *in situ* by a cork pressed on to it by your fingers. You are hardly likely to have a styptic handy, so must trust to cold and compression till the doctor comes.

Remember, on this and all other *serious* emergencies, to

write the message down, and state the nature of the case, so that the doctor comes prepared. This is very important in country cases, where long distances have to be traversed; and we all know that *verbal* messages are apt at all times to be made a "mess of."

This form of hæmorrhage is very serious, and requires constant surgical care. The assigned causes for it are violence to the cord *before* it has *completely* exfoliated, blood dyscrasia, leading to a hæmorrhagic diathesis, and heredity; it is also said to run more in male than female infants. One feature of this complication is the recurrence of the hæmorrhage at certain intervals, and in varying quantity. For instance, the trouble may appear to have quite passed off, or to be so slight as to lead to the idea that it is controlled, when an attack of bleeding will come on suddenly, worse than any that have preceded it. I have known eczema supervene, but whatever may be the character or accompaniments of the disease, it is almost always fatal to infantile life.

Thursday's duties same as Monday, the only difference being that the infant requires a *slightly* increased allowance of food on that day, unless breast-fed.

Friday is a busy morning. Baby must be bathed, clean clothes put on, and the navel dressed. In all probability we shall find the cord off, and the umbilical scar perfectly smooth and clean. Nurses are under an opinion that the cords come off sooner in female than male infants. On other occasions the cord is still adherent, and we observe festering at the base, and fœtor. The soiled rag must be soaked off, the cord and round the umbilicus wiped thoroughly dry, fresh rag applied, and the starch powder freely used. I also advise that the belly-binder be not removed until the following *Sunday*, when we must examine the navel.

Saturday's duties same as *Thursday*.

On *Sunday* (our baby being a week old) we may, when bathing and dressing him, find the atrophied funis still *slightly* adherent to the umbilicus, by a mere thread as it were. There leave it. The slightest attempt to pull it off is most mischievous; unless you can *wash* the cord off, leave it on. There is a great difference in the periods at

which exfoliation takes place, which is difficult to account for. Speaking generally, carefulness aids healthy shedding; and neglect undoubtedly retards it, and leads to unhealthy conditions. Still, the fact remains that under every care the funis will remain much longer adherent in some infants than others, and that the scar is not always satisfactory. The earliest period for shedding is the *third* day from birth (the *Wednesday* of our calendar, counting *Monday* as the first complete day); the most frequent, the *fifth* day from birth (our *Friday*); but the seventh and eighth days are by no means uncommon. I have heard of the cord being on till the *tenth* day, but never had a case in my own practice. There is a prevalent idea amongst mothers and nurses that the cord remains on *longer* in strong than in weakly infants. I do not share these views, but am quite of opinion that early and healthy shedding is a sign of infantile health, nor do I consider my infant absolutely safe until all his umbilical troubles are over.

Under favourable conditions, and careful management, the umbilical scar (commonly called the navel), is perfectly clean and smooth, but such is not always the case. There may be redness and tenderness of the navel, or unhealthy granulations, with oozing ("weeping") from the exposed surface; or erythema round the base of the cord before shedding, or afterwards round the umbilicus; or there may be bleeding from the navel, and under certain exceptional and unfavourable surroundings, dangerous erysipelatous inflammation. For the first-mentioned trouble, unusual vascularity, and tenderness, I find a simple dressing of *white* vaseline, smeared over a piece of clean soft rag, as good as anything, applied night and morning. For granulation with discharge, a dressing with zinc ointment is preferable. I mix it with equal parts of spermacetic ointment or fresh cold cream, applied in the same way and times as the vaseline. For erythema, before or after shedding, use the starch powder. For erysipelatous inflammation medical aid must be sought, as it indicates serious blood condition, and is usually fatal. The same course must be pursued in umbilical hæmorrhage. With respect to erysipelas of the navel, it may be due to direct infection, or contaminated air. It is by no means infrequent in large lying-in hospitals and foul dwellings;

but is rarely seen in home practice, under care and cleanliness.

There is another trouble that has to be dealt with. Some cords are not attached *close* to the abdomen, but to a sort of fleshy excrescence or stalk, half-an-inch or more in length, protruding from the umbilicus. We call this sort of "pouching" a protuberant navel; it is a matter of little consequence if properly managed. The only measures required are compression and binding. How shall we pad? In simple cases, where the protrusion is only *slight* (and this often occurs), rag or lint will answer our purpose for a compress. I prefer *rag* cut into small pieces, about eight or ten, two and a half inches long, and one and a half wide, placed alternately cross wise and long wise over the navel. Make firm pressure over the compress, and keep it *in situ* with the belly-binder. In some cases the protrusion is much more marked, the navel projecting for an inch or more from the abdomen, and we have to use and continue a firmer kind of pad or compress, the most popular being a piece of cork cut into disc about an eighth of an inch thick, and protected by lint, or sewn up in a piece of linen rag. A *florin* is sometimes brought into requisition, used in the same way. There is a little plan I have that I prefer to either of these contrivances, which are too *hard* for a tender baby—that is, a *small* piece of sponge pushed well on to the umbilicus over the protrusion, and over that the rag compress, the whole kept in position by the flannel belly-binder. The sponge must be changed night and morning, and kept clean by being rinsed with a solution of borax. It is better to have two pieces of sponge in use, and change them daily.

And here I must say a word or two about sponges. To my way of thinking, the less we use them the better; and for *both* our patients I only recommend them for face washing. They should be of the finest, softest quality (Turkish), *never* have soap rubbed on to them, nor wring them out of soapy water. For baby we require a small, soft sponge for the face, and a larger and coarser piece (honeycomb) for the bath, simply for douching the head and shoulders, and each sponge should be kept for its own special purpose. There are two things for a nurse to

attend to about sponges—firstly, to *keep* them clean by careful using (always squeeze them as dry as possible after using), and the next to clean them *well* when they require it, and we often have to take them up dirty. To cleanse and purify sponges I know nothing better than borax, used in this wise: Take a small packet of Californian borax (we should always have a store of it in our portion of nursing work), and dissolve it in a quart of *boiling* water in a jug; let it stand until quite cold. When you are going to wash your sponge pour some plain *cold* water into a hand-basin; and then, after stirring the solution up with a spoon (do not dip your hand into it), add about half a pint of it. Put your sponge at the bottom of the basin, and *pummel* it well with both your hands; then pour off the dirty water, and repeat the process until your sponge is perfectly clean. Never attempt to clean sponges with hot water, nor with washing soda, nor washing powder.

I have no more to tell you about navel management, but to remind you that the navel must be washed well with warm soap and water once every day, using a soft piece of flannel for the purpose, wiped thoroughly dry and starch-powdered. Some nurses are rather apt to neglect this, and allow the umbilicus to get dirty. There is sometimes a little blood about it, which if allowed to dry and *remain* on will set up irritation. There is another navel trouble called umbilical hernia; but I shall touch upon that and other congenital defects in a future chapter.

We will now enter upon another early infantile trouble that may occur at birth or a few days afterwards, that in midwifery nursing we call tumidity of the breasts, accompanied in instances by a slight secretion from the mammary gland. It has been said that this singular enlargement is more frequent in male than female infants. It is a matter of little consequence in itself, but fraught with very distressful consequences to our little patient in careless and ignorant hands, and for this reason I shall enter into the proper treatment of the breasts in infants very fully.

In order to bring home to the minds of my young nursing readers the necessity of carefulness and common sense in dealing with a case of tumidity, we will trace a cause of mismanagement but only too prevalent amongst the in-

capables of our department, and not the "Circumlocution Office" itself could afford us a more striking example of how *not* to do it than they. We will assume, then, that at the time of birth, or a few days after, one—or perhaps both—breasts show signs of enlargement—a puffiness; and the idea rampant in their mind is that these appearances are due to there being milk in the breasts, and they *at once* proceed to try and get it out, first by *squeezing* the breasts, and then *sucking* them; the result of these interesting manipulations is to produce *hardness* and *redness*, but *not* milk. These secondary symptoms are treated in a way that I think we may call the cream of incapacity—by *plaistering*, and in a style that excites the wonder and admiration of the *élite* of the maternal circle from its artistic finish. The diachylon plaister is cut into short and narrow strips, and placed over the breasts in a way that bears a fanciful resemblance to the crosswise arrangement that added to the æsthetic beauty of the jam tarts of our youthful days. Having repeatedly and in vain inquired for the *rationale* of this remarkable piece of surgery (?), I have felt myself bound, in the interests of the little victim, to remove the strips, when we find the breasts tense, tender, and inflamed; matter forms, infantile breast abscess results, and in female infants may lead to serious mammary results in the future; and here, as ever, muddle leads to trouble immediate or remote.

There is yet another source of injury to the infant's breasts—*pin-pricks*, happily far less common now than formerly, when the belly-binder was fastened on with pins. Very small pins were used, mostly made of brass, or sometimes ordinary sized pins of the same metal, and these aforesaid pins were often dirty or *cankered* from long use, and a prick from them would often lead to a painful sore. In one case that came under my knowledge a prick from a dirty old brass pin led to inflammation and breast abscess of a serious character to a female infant; in another there was every reason to believe that a fine male infant died from blood-poisoning from the effects of a prick from a cankered brass pin, that ran into the breast, just below the nipple; the nurse was an old Welsh woman, and a decided believer in brass pins for babies. Another mechanical cause of breast

mischief is "thumbing," due to careless handling. There are mothers and nurses (and women who are neither) who will lift a baby up by placing *both* their hands under his arms, and this ungainly practice tends to breast bruising, from the hands being brought *over* the breast. Others, again, "clutch" at the *front* of the gowns, as a *point d'appui*, for raising him up, and here again there is probability of breast bruising. Having drawn the attention of my readers to some of the errors of mismanagement in cases of "tumidity," we will do our best to deal with it on the lines of common sense and humanity (?)

I have pointed out to my readers how important a point in Obstetric Nursing is the *skilful handling* of the infant, which can only be acquired by good instruction, and perfected by experience. There are three parts in the infant that especially require carefulness in the management of them, from the time of birth upwards—the head, the navel, and the breasts. We have dwelt upon the two former; we will now discuss the last. Observing, then, at birth that one or both of the breasts are enlarged, you must be especially careful to avoid *all* pressure over them from your hands or baby's clothes, and here the little barrow-coat I described to you is of especial comfort. In a few days' time the breasts may become somewhat *hard*, and rather *red*; when you give baby his bath, lave the breasts with the warm water poured *over* the breasts with a *sponge*, but do *not* soap them. When wiping the infant after the bath, dry the breasts very thoroughly with a soft napkin, and anoint them with *white* vaseline; this may be repeated at night. In order the more fully to protect the breasts, place a thin layer of medicated cotton wool over them. There is one part of baby's attire that is apt to chafe the tender breasts—the front of the gown, when it gets stiffened by the milk ejected or spilled over it. Now, it is very undesirable to be frequently changing the gown in a case like this, and equally so to have it soiled, and I advise a *soft* bib to be used to protect it, which can be frequently changed without disturbing baby. I emphasise *soft* bibs, and prefer them extemporised from old cambric pocket-handkerchiefs, or better still, white silk, made soft by repeated washing, to the orthodox marsala article, fastened round the neck like

Toby's collar. They (the handkerchiefs) should be put on crosswise, over one shoulder and under one arm, and pinned there with a safety pin. They never slip, and they never half choke the baby like the aforesaid, and hence I prefer them.

Supposing, now, that for some reason or other both breasts or one of them inflame, and we get increased swelling, hardness, heat, and redness (I have no experience of all this happening under sensible treatment; but I *do* know that hundreds of infants have "broken breasts" as well as mothers), we must apply bread and water poultices. The rags used for the poultices should be of the *softest*—the same may be said of the bread. This distressful termination is of course a "pull-back" to poor baby, but it is not often of long duration; and there is nothing carries him over this and all his other baby troubles like breast-feeding.

There is yet another infantile trouble coeval with those we have just touched upon, the saddest of all—the familiar "sore eyes," in midwifery nursing known as infantile (or, shall we not rather say congenital) ophthalmia. As this is a matter of momentous importance to women engaged in Obstetric Nursing, we will give the matter our fullest attention.

What is ophthalmia? and why should the newly-born have it at all? Ophthalmia may be defined as an inflammation of the delicate vascular and sensitive mucous membrane that lines the eyelids. Amongst other causes it may be due to excessive light, to the burning heat of the tropics (combined with great dryness of the atmosphere), to the polluted air of unhealthy or overcrowded dwellings, or to contamination. The last two causes are most frequently the factors in the production of infantile ophthalmia. The former is one of the reasons for the outbreaks of ophthalmia in the Wards of Lying-in Hospitals or Workhouses. A professional friend of mine who was nursing at the British Embassy at St. Petersburg (and in due time saw the sights of the city), told me that in the immense Foundling Establishment there the outbreaks of ophthalmia were terrible among the infants. There is a point about infantile ophthalmia that at first appears quite inexplicable. The

infant is born under every possible advantage—pure air, pure food, exquisite cleanliness, and tenderest care; and yet, for all these blessings, the dreaded disease makes its appearance; on the third day from birth the eyes show signs of weakness, and by the fifth ophthalmia is developed. Now, why is this? Because the eyes were contaminated by the vaginal discharges at *the time of birth*, and we are ignorant of the fact until it declares itself as disease, and this cause, and this only, is the origin of infantile ophthalmia. It may be intensely aggravated by polluted surroundings, by crass ignorance, or by culpable negligence, or by the baneful practice of mothers and nurses *tampering* with the disease on their own responsibility—substituting inexperience for science. I write the more earnestly on this matter, because the most unjust, not to say *cruel*, imputations have often been made against a nurse by those who, ignorant (or professedly so) of the true cause of the evil, have *blamed her* for it. Not the slightest blame can be attributed to a nurse for the *existence* of the disease, but no censure can be too severe for one who neglects to have the infant's eyes *promptly* and properly attended to, and she should report the case to the doctor at once.

We will now turn our attention to the treatment of the eyes and the infant, for both will require extra care at our hands. With regard to the former, there are two methods to pursue, that we will call the preventive and the curative. Now, there is one blessed consolation about infantile ophthalmia—that it is one of the comparatively few diseases that science *can cure*; it is also one that no accoucheur can *prevent*; hence prophylactic measures have not the value that attaches to them in those other portions of Obstetric Nursing I have brought before your notice. We cannot stave off the foe, but we meet him “like the strong man armed.” The dreaded danger of infantile ophthalmia is, as my nursing readers know, possible loss of vision, complete or partial, and the surgeon has not only to cure the disease, but to save the sight. Now why is this? Because we all know that the disease attacks the eyelids in the first instance. In order to show you the extreme importance of *vigilance* and care in ophthalmic catarrh, we will contrast it, by way of analogy, with catarrh of the respiratory mucous

membrane. We "catch cold," and become aware of the fact by an acrid, watery discharge from the nasal mucous membrane; next, the trachea becomes tender and inflamed; then the disease spreads to the bronchial tubes—we get a secretion of glairy mucous and cough; in a few days the lymph may become prevalent; still the inflammation extends; the fine bronchial tubes, then one or both lungs are attacked; the air-cells, of which become blocked; respiration is impossible; the patient dies of pneumonia.

Now a somewhat similar course of events takes place in infantile ophthalmia, and the *death* (blindness) of one or both eyes results; and we say the disease was fatal (to vision) and we call it single or double ophthalmia. There is no outward indication of the disease at the time of birth; many of the appearances attributed to it are fallacious, as I shall point out to you further on. About the third day there is a secretion of clear watery fluid from one or both eyes, and we say they "water." In the course of two or three days more, the discharge increases in quantity and very singularly alters in *character*, becoming *thick* and purulent, and in neglected cases the inflammation spreads to the eye itself, the vessels of which become intensely congested, and we say the eyes are blood-shot. There are two portions in the eye, the opaque (that we call the eyeball) and the clear and coloured part of the eye (that we call the iris). In the centre of the iris is a small dark disc, called the pupil, and through that minute aperture the light is admitted to the eye, and, as you all know, it expands and contracts under the influence of light and under other influences; and these movements are controlled by the most beautiful and delicate muscular structures of the whole body. The pupil may be called the window of the eye. We will take two panes of glass in a window, the one clear and translucent, the other thick—commonly called ground-glass—or opaque (blind); now how is it that the window of the eye sometimes becomes hopelessly dimmed? for that is what happens in infantile ophthalmia, under ignorance or neglect, and our poor baby is blind or partially blind for life. How is this brought about? Because the inflammation has spread to the *eye*. An effusion of lymph has taken place in the delicate structures involved in vision—they are darkened;

and much as the blocking of the ultimate air-cells of the lungs extinguishes the *breath* of life, so the *light* of life may be lost in eternal darkness.

As an Obstetric Nurse, it will be your duty to carry out any course of treatment the doctor may desire, and perhaps the few remarks I shall have to make upon the subject will be of more practical value to women engaged in midwifery practice than in midwifery nursing, though it must not be forgotten that the matter of infantile ophthalmia is one of gravest importance to *all* women employed in our portion of nursing work.

The care of the eyes begins at the moment of birth, when they should be wiped clean with a soft napkin *as soon as the head is expelled*, and if possible before the eyes are opened—in an *inward* direction towards the nose. Should there not be time to do this *buoy up the head* with your hand until you can attend to the eyes. When the infant is bathed, the eyes must be well washed, and here one of the great advantages (in my judgment) of *distilled* water comes in for infantile bathing. It is the opinion of many accoucheurs that the eyes should be treated with an antiseptic lotion at birth, Dr. Cullingworth advising the corrosive sublimate (excessively dilute) for that purpose, and there are numerous other antiseptics besides. I shall not express any opinion upon the subject other than that, in my judgment, they are not *necessary to begin with*. Millions of infants are born who never have ophthalmia at all, and when they do, the trouble can be dealt with *at once*, and I confess that professionally I feel more confidence in the *cure* than the prevention (?) On the third day from birth (most commonly) you may observe that one or both eyes begin to water and look weak. I have often found the following a simple and efficient remedy: Six ounces finest double-distilled French rose-water, powdered alum *twelve grains*—you must *weigh it*—as it is essential that the quantity used should be *exact* and *small*, and the lotion must *not* be used until the *whole* of the alum is perfectly dissolved; *drop* the lotion into the eye three or four times a day. I have known numbers of cases where this safe and *painless* application has effectually stopped the effusion from the eyes. But such is not always the case; the discharge rapidly increases in quantity, and alters

materially in character, becoming thick and purulent; the eyelids are greatly swollen, tender and inflamed—we have declared ophthalmia, and we have *at once* to meet the disease. And here let me remind my young readers that in all cases of ophthalmia, it is advisable to have recourse to manual disinfection; before and after dressing the eyes dip your hands up to the wrists in a solution of Condylé, and wipe but not absolutely dry them. The remedy most commonly adopted by ophthalmic surgeons is nitrate of silver—*two grains to one ounce* of *distilled* or rose-water, and this lotion must be *dropped* into the eyes every four hours. This preparation is poisonous, and stains, hence it must be used carefully—kept apart from all other medicines, put into a dark blue bottle, and labelled “*Eye Lotion—Poison.*” The lotion must be applied with an eye-dropper. They are made of glass; of the two kinds most commonly used, one is called a pourpette—it has a long narrow tube at one end, the other larger and upper end is somewhat globular, open at the top, and over this a piece of membrane is tightly stretched. You insert the tube into the lotion and draw it up into the upper part by pressing upon the membrane, and drop the lotion into the eyes through the tube. The other, also glass, is a more simple affair; it is four and a-half inches long, open at one end, and has a narrow pencil-like point at the other, and it is about the calibre of an ordinary drawing pencil. When about to use it, hold it between the thumb and finger of your *left* hand, open end up, and press the pointed end well down on to the bulb of your little finger of the same hand, then drop in the lotion to about a third of the tube; then take the eye dropper between the thumb and forefinger of your *right* hand, turn it *pointed* end up, and press the bulb of your thumb firmly on to the open end. You now have the tube ready charged for use, but before doing so you must prepare and position the little patient. This is a somewhat important matter, as the nitrate of silver stains and spoils, and you must bear this in mind when using it. The infant should be laid down on a bed or his cot, and a napkin put under his chin, to save his gown from staining, and in the way I told you of recently. Some old napkins or handkerchiefs should be kept for this purpose, as they become greatly stained, and, when washed, often fall into

holes. For the want of this precaution, I have known numbers of *good* napkins destroyed. When you dress the *right* eye let baby be placed on his *left* side, and *vice versâ*. Before applying the lotion, liberate the matter from the eyes and wipe them clean with a piece of *dry*, soft rag or cotton wool, which should be *at once* destroyed after using. Having the eye-dropper charged and held in your *right* hand, gently open the eye with the thumb and forefinger of your *left* hand, and beginning from the outer margin of the eyelid, drop the lotion into the eye, *inward* towards the nose, so as to sweep over the edges of the eyelids. This must be done as quickly as possible, as the process is a painful one, and our poor baby cries bitterly under the infliction. The lotion that runs on to the *face* can be wiped off at once, but no attempt whatever must be made to *wipe* the eyes—the lotion must be allowed to dry on. There is another method of applying the lotion that I prefer to either the pourpette or eye-dropper—that is, a fine camel-hair pencil, which you dip into a small portion of the lotion poured off from the rest into any small *glass* or *earthenware* vessel you may have at hand. Saturate the brush in the lotion, and let it drop into the eye, and pass the brush over and between the eyelids as far as you can reach, from their *outer* margin towards the nose, as you did with the eye-dropper, the position of the baby being, of course, just the same. Rinse the brush out of a solution of common salt when done with, and wipe it dry ready for next use.

Having dressed the eyes, you must attend to baby as far as possible; it is better to do so just before feeding time, so that he can find solace for his woes in breast or bottle, and after that slumber. What do we observe next? That during sleep one or both eyes are gummed up with the discharge from them. Now, how are we to clean this off; *Not* with water, nor any kind of eye-wash; we must use an emollient, and the very best for the purpose is *white* vaseline, which you lightly apply to the edge of the eyelids; let it remain there for a few minutes and then wipe it off with a piece of soft, *dry* rag, which should be destroyed at once. Unclose the eyes to free any matter there, and again wipe them, and if the time is up, use the lotion. I have pointed out to you how *heat* and *light* aggravate ophthalmia.

and you must exercise a very tender care in these matters and see that baby's eyes are not exposed to direct sunlight, nor the radiant heat of a fire, as both are hurtful. If it is spring or summer time, the light of the room must be darkened by a *green* Holland or Venetian blind. The temperature of the room should be *cool*, 60 deg., the air kept *pure* by ventilation. In cold, or even temperate weather, you will see the advantage of the cot warmer I told you about in a recent chapter, as you can keep the infant warm without overheating the room, or burdening him with clothes, and in ophthalmia, as in other inflammations, the extremities are apt to be cold, and this may be avoided by the little care I have suggested.

Under ordinary circumstances, infantile ophthalmia quickly yields to careful and continuous treatment; the discharge of matter lessens and begins to dry up; the swelling and inflammation of the eyelids goes down, and the eyes get stronger. There may be a little watering from them after the caustic is discontinued, and here, again, we find the simple eye lotion we began with useful. Any gumming that may be observed must be healed by the white vaseline, and the discharge wiped off *before* the eyes are washed.

There is another and more virulent form of ophthalmia, very intractable, and that but too often runs a devastating course, and complete or partial blindness results from irremediable damage to one or both eyes—that surgeons call gonorrhœal ophthalmia. In these cases antiseptic lotions must be used *at birth*. It is intensely contagious, and the greatest care is needed in using the dressings, lest they become a source of infection to the nurse or others. The mode of treatment is much the same as the one I have described to you, only more *severe*; the caustic is doubled in strength, and after every application of it, the eyes must be washed with a solution of salt, in cold water, better thrown from a glass syringe than any other way. The antiseptic *manual* precautions must be rigidly observed. Instead of using rag to wipe the matter from the eyes, a piece of white medicated wool, held in your dressing scissors to *mop* the discharge up, is the safer plan, the soiled wool to be at once destroyed. (I use wool under any circumstances to cleanse the eyes in

my own practice.) In the gumming of the eyelids the white vaseline must be smeared on them with a small *bone* spoon, and wiped off with cotton wool, to be burnt after using at once. It is in this unfortunate kind of case that Obstetric Nurses are apt to be blamed by the unthinking because baby's eyes do *not* get well soon enough; and sometimes *quack* remedies are urged on her unknown to the doctor. Be *firm* and *patient* here, for your little patient's sake and your own; and here I will just pause to give a little word of warning to my young sister-workers—that is on these occasions to preserve absolute *silence*; as a nurse it is your duty to deal with the disease, *not* to account for it. Always take the most hopeful *view* of any case of infantile ophthalmia, simple or severe, but keep your *opinions* to yourself; respect the feelings of your patients, gentle or simple, and you will do more to win their regard than by airing your superior (?) knowledge of the subject.

Our first care after an attack of ophthalmia is to ascertain what amount, if any, of damage the eyes have sustained by it. We examine them, and we may possibly observe on one or both eyes a little localised cloudiness, commonly called specks. They are permanent, and due to what ophthalmic surgeons call ulceration of the cornea, the result of the disease spreading to eye structures. One effect of this lesion is that the delicate muscular adjustments of the eye are interfered with, and a defect called “squinting,” or strabismus ensues, a very frequent *sequelæ* of infantile ophthalmia, which can ultimately be remedied by ophthalmic surgery. There are other ways of treating the disease we have just been describing, but as far as my experience goes, I know of none *surer*, if promptly begun and thoroughly carried out, and, in that respect, safer to women engaged in midwifery practice, *to begin with*, as it aids other and more drastic measures that may be necessary later on. My readers must have observed in this course of treatment that the eyes are not to be *washed*. Water simply spreads the matter about, and our object is to localise the discharge, and dry it up as soon as it forms. All the rags used to wipe the eyes should be *dry*, soft, and clean; but, in my judgment, cotton-wool is preferable to rags.

I will now bring before my young readers some of the

measures adopted by ignorant and careless women, which are not only *negatively* fallacious (doing no good), but *destructively* so, leading, in thousands of instances, to irreparable mischief to the infant's eyesight. A course of "incapacity" runs something on these lines: About the third day from birth the infant's eyes are observed to be weak, and the mother is *at once* enjoined to milk her breasts into them night and morning, or oftener. At this period the milk is colostric, and the fatty particles it contains tend to heat and irritate the tender eyes. As an alternative to this process, or often combined with it, is the anointing of the eyes with the mother's *fasting* spittle; these two old delusions are regarded as of equal and sovereign efficacy, and no amount of *failure* appears able to weaken the maternal faith in them. The eyes begin to discharge and look worse; the next move is to get some sort of salve or eye ointment from a popular Mr. or Mrs. Herbalist. These dubious salves are for the most part made up with *rancid* fat and some sort of deleterious ingredient. I have known red oxide of mercury to be one, and acetate of lead another. They are, of course, used without the slightest regard as to *quantity* or cleanliness, and the lid of the box is quite as often off as on. As things do not improve, "washes" are tried, sometimes *vegetable* decoctions simply, *parsley* water being in favour with country midwives, and other simples besides. These not proving altogether satisfactory, eye *lotions* are obtained from chemists or herbalists, which frequently contain preparations of copper or lead. These lotions are applied with rags, the eyes being bathed with them. Still the disease goes on, the eyelids are terribly inflamed and full of matter; poultices are made for them in the most careless manner, and applied or renewed as often as may be *convenient*; they are sometimes made with bread and milk, and they soon become stiff and sour, and the *heat* and *weight* of them are oppressive to the tender eye; then again *cold* toast and water poultices are put on—better than the former perhaps. The object of these applications is to *cleanse* the eyes and diminish the discharge from them, commonly called *drawing the matter out of them*, when, in fact, they are aggravating the very condition they are supposed to alleviate. The disease is untouched by them, and

poultices of any sort are useless. It is one of the characteristics of *true* infantile ophthalmia that it never gets well of itself, as some ailments do, but, unless *checked*, runs on a fell destructive course, as in the case before us. And *last* of all, instead of *first* of all, the little victim is taken to the "Orsepital," and in countless cases (especially in country places) one or both eyes are doomed to darkness. I have pointed out to you very recently, how muddle leads to trouble in another instance of mismanagement, of comparatively little moment; but here the ruthless hand of error may quench for ever one of the most priceless gifts of God—vision.

I intimated to you, in the early part of this chapter, that there are certain conditions and appearances about the eyes at birth that nurses and mothers are apt to mistake for ophthalmia, but which are in truth unimportant. For instance, *birth pressure* affects the eyes sometimes, and when the infant is born the eyelids may be suffused with a sort of rosy blush, with, perhaps, slight swelling. These appearances may be due to the irritating effects of the liquor amnii under certain conditions. This affection is quite unimportant if *left alone*, but it may be made a cause of suffering to the infant by unnecessary interference, such as *salves* and *poultices*. You have only to bathe the eyes when the infant has his bath by *pouring warm water over* them with a sponge, and then *mopping* the eyes dry with a soft, warm napkin, but not rubbing them. Then *lightly* powder over the eyebrows and upper part of the eyelids with the *starch* powder, prepared in the way I told you of, and *dusted* on from the muslin-bag. Do *not* use toilet powders, nor powder-puffs. Bear this caution in mind, as you are never sure what the former contains. After this dressing the eyes must be left alone for at least a day after birth, when the redness will, most likely, have passed off, and any swellings there may have been subsided. On some occasions the eyelids are puffed at birth, having a sort of dropsical effusion in them. The eyes are closed, and remain so for a day or so. Treat in the same way *at first*, as in the other case. wiping the eyes with great care, and then *dusting* them with the starch powder, or *powdered starch*. No *water* must be used to the eyes; the powder will protect and sooth the

tender cuticle better than anything else. The swelling will subside, and the eyes open in a day or two. Avoid all pressure over them. This simple, careful, management will save all risk of further troubles, which only result from mismanagement.

The *eyes* are also affected by pressure, and one or sometimes both are bloodshot *at birth*, due to an effusion of arterial blood into the cornea—injection of the cornea I think it is called. The blood absorbs in a few days. I have never seen any harm come from this condition, nor does it seem to cause the infant pain. The *eyelids* are not affected, nor is there any watery or other discharge from them. Avoid light and heat to the eyes while thus affected.

There is another and very sad affection of the eyes—*congenital blindness*. It is not apparent at birth; it may be weeks before the discovery is made, and the ophthalmoscope confirms all that observation has surmised. This dire affliction is attributed to causes occurring before birth, and to be independent of any injury occurring during parturition.

Hitherto we have dwelt upon eye troubles depending upon circumstances connected with birth, but there are minor affections that may come on a few days afterwards that will require a little attention; for instance, an infant may “catch a cold” in his eye or eyes, from carelessness or accident at the time of birth, and they may be weak and *watery*. So long as the fluid effused is perfectly *clean*, bathing the eyes with a little rose-water, or distilled water just warm will soothe them, and any little gumming or discharge from them that may come on can be cleansed off with the white vaseline, and the eyes will soon be well. To *begin* with painful and drastic remedies *before* they are necessary would be to inflict unnecessary *pain*.

My nursing readers may ask, How is a nurse to know the difference between simple catarrh and the *beginning* of ophthalmia? You cannot *know*; you can only *watch*. In the former case the eyes soon get well; in the latter they become *rapidly worse*. Act *promptly*, do the eyes yourself or have them done at *once*. *Delay* is more *dangerous* than the disease—nay, I scarcely hesitate to say that where there is *no delay*, no *half-measures* in carrying out the necessary *treatment*, there is little or *no danger* to vision. Again, an

infant's eyes may be irritated, and inflamed even, from the crass ignorance that leads women to rub brandy over the head, and in this *enlightened* process, spilling some of the spirit into the eyes. My young readers may be surprised when I tell them that this baneful practice *goes on still*, and *not* always amongst the poor and ignorant; hence I enter my fervent protest against it.

There is another point to bear in mind—that neither carelessness nor ignorance can *produce*, though they may, and do, intensely aggravate *congenital ophthalmia*. It is a specific disease peculiar to the newly-born, and it has to be met by specific remedies.

The only point we have to consider now is to what extent the infant's general health suffers from the disease. Under mild forms there is not much constitutional distress, though it has been often noticed that constipation is a concomitant symptom of infantile ophthalmia. It is probable that some brain irritation may be induced by the painful remedies we have to adopt, and we know that in *brain disease* constipation exists. Mild purgatives are generally resorted to, the oil of sweet almonds being about the most delicate, though the inevitable castor oil is the more usual dose. In my judgment, it is wiser in these cases to rely rather upon dietetic than medicinal measures to meet infantile constipation, and, if the means of the patient permit, I should strongly advise a wet nurse for the infant, if the mother does not intend to suckle, as there is nothing brings him over his troubles better than *breast* milk. If we are thrown upon hand-feeding, we should avail ourselves of those methods for the pre-digestion of the cow's milk that modern science has afforded us as the next best antidote for constipation. *Pure* goat's milk is often good here, slightly sweetened; it is lighter of digestion than cow's milk. I need scarcely say that *no form of solid food* is to be thought of, though I grieve to say *it is given*, not only in the form of *sop*, but in those delusive substances we buy in cans and tins that may be useful *six months hence*—but *not now*.

There is another trouble in infantile ophthalmia we may have to expect from the *crying* that results from pain—viz., hernia, inguinal or scrotal. This serious possibility is rather hard to avert. I know of nothing better than to soothe the

infant by every tender care you can to *stop* the crying; hence I emphasise the advantage of *breast-feeding* in these cases. I have advised you if the infant is *hand-fed*—and what an amount of it we have now!—to have the food ready as soon as the eyes are dressed; when fed place him in his cot; keep the light from his eyes, and he will most likely soon forget his woes in slumber.

With respect to the nursing duties required in the *severer* forms of infantile ophthalmia, and other kindred maladies, I have little or nothing to tell you, as *topical measures* will not alone suffice here. The infant will have to be placed under medical care, and all a nurse has to do is to carry out medical instructions. On no account give the infant any medicines whatever on your own responsibility, and decline to do so on *other people's*, without medical knowledge or sanction.

CHAPTER IV.

INFANTILE FEEDING.

HUMAN MILK — COMPONENT PARTS OF — PURPOSES OF —
 COLOSTRUM A SUBSTANCE PRESENT IN BREAST MILK
 WHEN FIRST SECRETED AFTER DELIVERY—PROPERTIES
 OF—TEMPERATURE OF BREAST MILK—COLOUR OF—ITS
 ADVANTAGES OVER ALL OTHER FOOD FOR INFANTS—
 THE NIPPLES — DIFFERENCE IN — TREATMENT OF —
 MANAGEMENT OF—SUCKLING—DRESS BEST SUITED FOR.

AT first thought this might appear a wholly superfluous chapter, seeing that our baby, like the rest of the mammalian young, brings his food with him : hence our only care should be to *feed* and tend the *mother*. But, as a matter of practical fact, there is no part of Obstetrical Nursing more beset with difficulties, for so varied and so trying are the conditions we have to meet, that mere routine instruction is of scant avail, and we may almost say that none of the cases are even *identical*. There is another consideration with respect to the subject we are about to discuss that I feel sure must enlist all our womanly sympathies for our little patient. No other mammal than he has his natural aliment taken away from him *at first*, for even poor little calves and lambs have the consolation of their mother's milk till they—meet their doom ! But *we* are continually called upon to perform the unpleasing, and, shall I add, the *unnatural* duty of *feeding* our baby with *one* hand and driving away his natural aliment with the other ; and *this not* from necessity, but oftentimes from sheer maternal waywardness. And this is an age that *talks* hygiene and sanitation by the mile to *poor* mothers, and yet can coolly jeopardise the well-being of two lives to the exigencies of civilisation (?), and that at a most critical period of the maternal and infantile health.

There are three methods of infantile feeding, and I propose to deal with each separately and comprehensively—viz., (1)

breast feeding solely; (2) hand feeding solely; (3) mixed feeding, part breast, part hand.

We will begin with the first; and before anything else, turn our thoughts for a few moments to that marvellous production of Nature, the milk of the mammalia, which, like and unlike, is formed for the sustentation of the young in all divisions of that portion of the animal kingdom, carnivora or herbivora; and, stranger still, to the denizens of the ocean and the numerous mammiferous amphibia. There is one fact arrests our attention here, that the *food* from which this aliment is formed is of the most varied and opposite kind—flesh, fish, herbage, or grain, and yet in Nature's cunning crucible they all yield the milk necessary for the newly-born mammal. First in pre-eminence amongst milk-yielding animals comes the bovine herbivora, and from that placid, kindly ruminant, the cow, we derive one of the most perfect alimentary substances known to man.

And how fares the human mammal in this mighty scheme? Is he forgotten? It would almost seem so; for of all young things he is the most feeble, the most helpless, the most miserable. No furry coat protects his tender skin, and at the first rude shock of a cold world he cries piteously; he has no power to seek his proper sustenance, and were he left as he lies he would perish with hunger and cold. What, then, is his stay? Maternal love? But even this fails him at the supreme moment of his existence, for his mother is as helpless as he. It is then in his nurse's kindly heart and gentle hand he finds solace in his woes and comfort in his miseries. And thus it ever was. Woman's hand must minister to his first necessities, and at the "last scene of all that ends this strange eventful history," her's still. Should not, then, a nurse be an honoured woman amongst men?

Human milk most resembles that of the herbivora, and medical writers affirm that the ass's is the nearest approach to it. *Complimentary* to our sex, is it not? But as facts are *stubborn* things, I presume that accounts for it. As nurses, it is a matter of very little practical importance, for all we generally see of "asses'" (?) milk is brought to us by the *two-legged* variety of the species who wants us to believe that the ingenious concoction he favours us with is *sans reproche*, which we are not *quite* asinine enough to admit,

malgrè that little infirmity for thorns and thistles with which we are credited.

We will begin, then, with breast-feeding, and take it from a typical point of view, as, unless we have a certain standard to go by we cannot fully understand the matter, any more than we should know what a yard was without a yard measure.

Referring to our text-books, we find that human milk contains three classes of organic principles, the albuminous, the saccharine, and the oleaginous; together with the mineral elements which are required for the development and *consolidation* of the infant frame. The saline matters contained in milk are nearly identical with those of the blood, with a larger proportion, however, of lime and magnesia, which amount from two to two-and-a-half parts in a thousand. These elements are contained in a fluid medium, water, which is greatly in excess of all the other constituents, being from 860 to 910 parts in a 1000. The colour of human milk is bluish white, owing to its greater transparency as compared with cow's milk. The *proportion* of the component parts of milk to each other is a matter of much interest and practical importance, its average composition being 89 parts of water to 11 of solid constituents. These latter consist of lactine or sugar of milk, 4·5; casein, 3·5; of fatty matters or butter, 2·5; 0·3 of extractives, and 0·2 alkaline and earthy salts (phosphate of lime and magnesia). Now let us thoughtfully consider the *purpose* of each of these substances, or, if you will, its *destination* in the infant frame. We shall find some are *eliminated*, some *retained*, some *consumed*, and some *excreted*. And here I must pause to call your attention to the analogies that exist between blood and milk, which has been termed white blood. Both are *nutrient fluids*; both, under certain conditions, possess the property of *solidification*; but there is a point here to my mind of much interest—that this process tends to produce perfectly *opposite effects* in the human system. For instance, when from any cause the blood stream is diverted from the blood *current*, and poured into any of the cavities or other parts of the body and becomes *solid* or coagulated, its *nutrient value ceases*; it is no longer a source of *life*, but a menace to it, leading frequently to its extinction, as in

severe cases of internal hæmorrhage. When the milk fluid *consolidates*, it is the first step towards *nutrition*, and were it not so it would cease to be the absolutely *perfect nutriment* it is. The whey of the milk in a measure resembles the serum of the blood. Both contain albumen, the one in a *soluble*, the other in an *insoluble* condition. In the fluid medium of one, blood corpuscles circulate; in the other, milk corpuscles are suspended, and both are pre-eminently necessary to the nutrition of the body. The one fluid is arterialised, the other is not. Blood is formed for the maintenance of life *within* the body, milk is secreted from the blood elements for the sustentation of life *without* the body, and is absolutely useless to the individual from whom it flows, and under adverse circumstances may become a source of pain and disease to the maternal system.

Let us now pass under review the constituent elements of milk, and we will begin with the most abundant—water—which contains in solution saccharine, mineral, and earthy substances, which are made use of in the body. The water that is not required for the irrigation of the tissues, is eliminated through the renal organs. The cutaneous transpiration in infancy is very slight. I have no recollection of seeing a baby perspire except by the head. Of all the constituents of milk, we find the saccharine the most abundant, lactin or sugar of milk standing at 4·5. What is the purpose of this element? To support combustion. I pointed out to you in the present division of my subject that the infantile heart-beats were excessively rapid, from 130 to 140 per minute; the pulmonary circuit short and *swift*, the ratio of respiration being from 20 to 30 per minute. The vital fire burns fiercely in infancy; and Nature, with unerring wisdom, provides extra *fuel*. The lactin, or sugar of milk, is conveyed in the blood of the pulmonary vein to the lungs, and eliminated in the form of carbonic acid and water; and you know that upon the generation of carbonic acid the heat of the body is maintained, and the blood oxygenated. Our baby's blood is highly arterialised, and to this fact we owe the beautiful clear pink hue of the skin of a healthy, full-term, newly-born infant, especially after the bath. It always reminds me of the delicate *pink* lining of a sea-shell, and to my knowledge never recurs at any other

period of life. I shall have to revert to the saccharine element in milk further on, when we discuss hand-feeding, as it then becomes a matter of great practical importance. I must remind my young readers that lactin is one of the non-azotised substances—that is, it does *not* contain nitrogen. They are sometimes called the hydro-carbons.

The next most abundant element is casein, the solid constituent of milk. It stands at 3·5. It is an azotised substance, nearly allied to the albumen, and it is the sole form in which the young mammal receives albuminoid nutriment into its body during the period of lactation. In its composition it resembles albumen, and it is to that substance in an *insoluble* condition and in a state of minute division that milk owes its characteristic opacity. The casein may be called the tissue-forming element of milk, and there is one peculiarity about it, that it contains, in a state of mechanical admixture, the fatty or oleaginous elements of milk; and it is to these particles which also include a considerable amount of casein, together with the salt and sugar of milk, we owe the *cream* that rises to the surface of the milk, when it has remained at rest a certain period of time, and this substance is perhaps the most delicate form in which albuminoid nourishment can be conveyed to the infantile system. There is another point of *first* interest to my mind about casein, as it exists in the maternal and infantile systems respectively. As it flows from the breast it exists in the soluble form—the familiar milk; but when it passes into the infantile system it almost *immediately* assumes a *solid* form, commonly called *curd*, and in so doing carries *down* the *oleaginous globules* of the milk with it. You all know *cream* is not to be seen on the surface of whey, and in this solidification of the solid constituents of milk, combined with the fatty particles, Nature has to her hand plastic material for *cell-growth* and *tissue-food*.

And here I must call your attention to the casein, or “curd,” when it is ejected from the stomach of the infant soon after it has been swallowed. We observe that it is white, soft, flocculent and friable. Nature does not require all the solid matter contained in milk, hence a large portion of it, after it has been subjected to the digestive processes, is passed off as fœcal waste. And here I must point out to

you that except for a *change in colour* from white to orange, due to the admixture of bile during the passage of the food through the intestinal canal, there should be next to no difference in *substance* between the *curd* as ejected from the stomach of the infant, and that passed as fœcal waste, the soft, flocculent characteristics being especially preserved; and this is just what we find in healthy *breast-fed* infants under normal conditions, and I am almost prepared to say *persistently* in none other.

We have now traced the course of the solid portion of the milk from first to last. We have dwelt upon the various component parts of human milk—the aqueous, the saccharine, the albuminous, and the oleaginous; and there now remain the saline and mineral elements. The saline matters contained in milk nearly resemble those of the blood, chloride of sodium (common salt) and potassium being present. The mineral substances—principally phosphate of lime and magnesia—which exist in the small proportion of two to two and a-half in the thousand parts are, nevertheless, of infinite importance for the consolidation of the bony structures of the infant frame. They are held in solution principally by the casein, which has a remarkable power of combining with them.

We will consider breast feeding firstly in its infantile; secondly, in its maternal aspects. And here I will frankly and at once confess that I hold a brief for my little patient, and shall do my best to defend him from those modern innovations that have tended in my judgment to debar him from his natural rights and privileges, and not always to his well-being. I need scarcely remind my nursing readers that the infant can receive his natural aliment either from his own mother or another baby's mother, commonly called a wet-nurse—or to my mind far preferably a foster mother; and I shall point out to you that *maternal* and *vicarious* suckling respectively are not, and except under the most exceptional circumstances cannot be, the *same thing*, and we will discuss the former and normal condition first—we can enter into the deviations therefrom in a future chapter.

The first point we observe in maternal feeding is the consummate wisdom with which Nature adapts the food of the infant to his needs, from the hour of his birth until the

natural end of lactation, that is when dentition sets in, and these peculiar changes can perhaps be better seen in young and healthy *primipara* than in the latter periods of child-bearing life, and hence we will select the young nursing mother, as the fairer example of the conditions we are about to describe. The first secretion from the breast is commonly clear, watery, thin, and scant in quantity; as the breasts fill, the fluid alters in character, becoming opaque, *thick*, and *yellow*. This hue is due to an excess of fatty particles in the milk, called the colostrum, and this colostric condition may continue for a few days, when another change takes place, the milk becoming thinner and *whiter*, the fatty particles diminish in quantity, and in the course of five or six days the milk flow becomes abundant, and its condition perfect, and we say that lactation is established.

Now to what extent do these changes affect the newly-born infant? The *first* secretion taxes his digestive powers but little, and serves as a sort of *solatium* till better things arrive. Now what does the colostrum do for him? We may be sure it has a purpose. It acts as a *natural* purge, to free him from a substance he no longer wants—the meconium poured during infantile life into the intestine of the foetus. Ignorance of this wise provision of nature has led to the reckless administration of *purgatives* by nurses, mothers, and other women to the newly-born, to clear the bowels! which is, in the vast majority of instances, a most pernicious practice. And here I must just say a word upon another common fallacy based upon the appearances the meconium presents whilst it is being *gradually* removed from the intestine; at first it is black, the familiar “black motions” of birth, which are really dark green, but as the quantity of the meconium diminishes, and it gets mingled with the other products of digestion it becomes paler in hue—greenish, the *green* motions as they are called by nurses, and this appearance has been but too often, and is still regarded as a *portent of evil* rather than the result of natural and *temporary* causes, and in consequence medication is at once rushed at; and the inevitable, though unimportant pain that the colostric purging occasions is aggravated into an evil, and becomes a source of infantile suffering and *mischief*. Whilst the meconium is being purged off by the colostrum, the milk

undergoes further changes; its solid constituent casein *plus* cream freed from a disturbing element, enters upon its great task of building up the infant frame. I have pointed out to you the characteristics of the curd of human milk when it first enters the infant stomach, and when it leaves the system, and need not repeat them here.

So much for the food of the infant, how about the way that nature imparts that nourishment? The method is suction, and the nipple is a most important part of the breast, for we know that a defective nipple may deprive an infant (unless artificial aid be resorted to) of his natural aliment, even though it exist in abundance in the breast. In previous chapters I have dwelt upon the care of the nipples during pregnancy and lying-in; but here we have to see how baby fares in the matter. The substitute for the mother's nipple is a familiar article, called an india-rubber teat—mostly *black*—to add to its attractions (?) I presume!

Let us just note some of the points of difference between this ingenious production and that provided by nature. In shape, the nipple is somewhat conical and *solid*—not *hollow*, forming a sort of little wind-bag, like the artificial contrivance—soft and moist to the infant's mouth, the base of the nipple forming the *point d'appui* during the act of suction; and when an infant is extremely tongue-tied, he cannot properly suck, and hence may *starve* in the midst of plenty unless the defect is promptly remedied; the areola also is soft and yielding, comparing very favourably with the hard bone disc substituted for it in bottle-feeding. The nipple is the apex of the breast, which is somewhat spherical in form, protuberant, and supported and kept in form by the pectoral muscles that attach it to the chest; it contains the mammary glands, and is abundantly supplied with blood vessels and nerves. The mammary glands are supplied with arterial blood to keep up the milk secretion from them; an onrush of milk, commonly called the "draught," is due to a wave of arterial blood sent to the breasts in obedience to the behests of the vasa motor nerves of the sympathetic nervous system, which distribute the arterial blood to every organ of the body.

They govern the whole sexual life of woman. In this

case they are the fount of maternal love. The mother's heart yearns towards her babe, and quick as thought the nutrient stream flows from the breast. The infant takes the life-giving fluid from her blood, and the two lives are as *one*; the food is formed fast and fresh for the infant's needs. Nature does *not* store her milk, and will not have it stored. If the supply of milk be too profuse we have to relieve the breasts, otherwise it would become a source of pain or even disease to the parent from what is generally called "wedging" or engorgement.

Again, the temperature of breast milk is unvarying (blood heat), its constituent parts invariable in their proportions, and as it has never been exposed to the air, it is absolutely free from all risk of septic contamination. Can all this be found in bottle feeding. A copy-book text told me in days of yore (I don't know where they got it from) that "comparisons are odious." I *believe* it when I compare "this sensitive warm motion," this living, feeling, form of beauty—the maternal breast—with its popular substitute, the anything but lovely, nay, dare I say odious, feeding-bottle—that hard, ugly, common-place glass receptacle, which, in its present-for-the-present new (?), or rather revived *old* shape, bears a fanciful resemblance to one of Schweppe's soda-water bottles! So much for the mechanical (?) part of breast-feeding, impossible to *better*, though it may be, and I admit is, ingeniously simulated; but there are physiological conditions, equally, if not more important, as I have just pointed out to you, that cannot be imitated, far less reproduced; and we will now note some of the effects produced by maternal breast feeding upon the infant, assuming, of course, that the mother is young and healthy, and the infant full term and also healthy.

When the breast milk enters the stomach its solid and fluid constituents are instantly separated by the action of the gastric juice; the curd, or casein, *carrying down* with it the fatty particles, or *cream*, which, in combination with it, is the tissue-forming substance of the infant system. A portion of this "curd" is often and at once ejected, a matter of little consequence, as it shows there is more of it than is required for immediate use. In breast milk the curd

is lighter in substance, and less in quantity, than that of cow's milk, hence better assimilated ; and constipation, with its attendant evils of pain and straining, avoided. Not less important is the fluid portion of the milk, or "whey," consisting of water, holding in solution the saccharine constituent, so necessary to support the heat of the body (and we all know how hot a healthy baby is), the mineral matters essential to build up the bony structure of the frame, and the saline, the smallest in quantity, but of infinite value in maintaining the blood in a pure condition. Now one and all of these component parts are present in *exactly* the right proportion for the infant's needs, and more wonderful still, are varied to suit them, according to the age of the infant, and these changes are of immeasurable importance to infantile life, and cannot be imitated. In foster-feeding the nurse has generally been confined a month before she takes up her vicarious duties, and her milk is not in the same state as it is after recent delivery, nor so *perfectly* adapted to the requirements of the *newly-born* infant, for whom the first month of lactation is of the highest consequence ; and the same may be said of the mother's well-being during that period. The mother and babe are *necessary* to each other, and "bottles" do not supply—they merely supplement—the need, and that very imperfectly.

The natural outcome of all nourishment is growth, and to my mind this matter of infant growth is one of great interest, and I think we shall find that the characteristics of breast growth and "bottle growth" (if I may so call it) differ remarkably, and my remarks will hold good from birth up to six months afterwards, and we must ever remember that the *foundation* of infantile health *begins* with infantile life ; and there is no surer basis to start upon than breast feeding. Let us take a typical case of *maternal* breast feeding in its highest developments. I will not say "ideal," because numbers of real instances have fallen under my observation, and we will see what deductions we can draw from it. In a maternally breast-fed infant, every organ of its body has its just and due proportion of nutriment, and the nervous and muscular systems have equally their wants supplied, and we must not forget that our baby has a *brain* to develop, as well as a body to grow. I am perfectly

aware that infants of phenomenal "fatness" can be and are nourished from bottles, but mere "fatness" is not altogether a sign of perfect infantile health and growth.

There are two points that, to my mind, are characteristic of maternal breast feeding as regards the infant—the skin and the *countenance*, or rather, shall we say, its effect upon the nervous and muscular systems respectively. We not only observe the perfect moulding of the baby's limbs, but the beauty of the baby flesh—its *pink* and *mottled* hue, its firmness, its satin-like smoothness and softness, its *coolness* to the touch. I have said I could tell a breast-fed baby with my eyes shut, from this peculiar feel of the skin alone, but I admit this may be fancy. Nor is our baby ever over-hot. I incline to the opinion that these conditions are rarely realised except when the mother has an abundant supply of *pure* air as well as pure food, and the blood both of mother and infant perfectly oxygenated, which can hardly be done in big cities. Nor is the effect upon the nervous system of the infant in breast feeding any the less noticeable, shown to us in one form by the expression of the infantile *countenance*, which, under happy conditions, is one of supreme *contentment*.

I may be told that suction is merely an instinctive act, and that a baby would suck a broomstick if he had nothing else to suck; possibly, and have a countenance equally "woodeny." That he *has* a choice is made plain by the fact that, in a very short period of time, a baby from the breast declines to accept any substitute for it, and he not only derives his nourishment from his mother's blood, but all his early happiness from her breast. In the sunshine of her love he grows and *feels*, this subtle, but silent bond of affection shows itself on the baby's face, and gives a characteristic expression to it, that we see reproduced by the brush of a Raphael or Guido, in the almost divine beauty of their matchless representation of the Madonna and Child.

There is another advantage in breast-feeding: it better serves to carry the infant over all his early troubles than any other method—the necessary vaccination, for instance, and the natural and inevitable dentition. In this latter case it is invaluable, because at that sensitive period there are frequently two diseases to encounter—viz., infantile diarrhœa

and infantile bronchitis, both of which diseases are immensely aggravated, if not actually brought about, by injudicious feeding. To these we may add the so-called teething convulsions, which as often as not are caused by dyspepsia *plus* foul air, as dentition *solely*; and we must remember that the commencement of dentition coincides in time to that period of infantile life in which all the evil effects of ignorance, mismanagement, and neglect—we may almost say from the very hour of birth—are made manifest in disease and suffering, that in a vast number of cases could have been averted by care and thought in the important matter of infant feeding.

And what is the end we should aim at here? To build up a *healthy* frame, to give *stamina* to the infant system. And what is stamina? We may define it as a power of resistance to evil influences from *without*, which again largely depends upon the maintenance of the vital force by *true* nutrition: we must not only provide for force used, but for force to be *stored* for time of need. A house built with rotten bricks can be neither safe nor sound, and, in spite of a goodly but delusive show of outside stucco, it falls with the blast. Even so is it with the house of life; from the very beginning of existence, a misfed infant is neither *safe* nor *healthy*, and but too often succumbs to the first assault of those remorseless foes—disease and death.

These remarks may appear to be somewhat beside our subject, but let us reflect that to our hands is entrusted in the *first* instance that tender little life, so wonderfully frail, and yet so tenacious. Let us show ourselves worthy of our trust, and *begin at the beginning*. The earnestness with which I regard this matter of infantile health must plead my excuse if I have dwelt somewhat more fully upon the subject than the occasion seems to demand, for in my judgment it is one of the most important portions of Obstetric Nursing.

We will now enter upon the nursing duties special to cases where the infant is to be fed from the breast solely; and we shall find that if there be less personal responsibility here than in hand-feeding, there is more trouble; and many nurses have told me they prefer to hand-feed the infant. In breast-feeding there are *two* interests to reconcile, and it is not always easy for a nurse to bring these *two* into *perfect*

accord, and more often than not our baby is "master of the situation," and pretty well pleases himself *when* he will take his nourishment, all persuasions on the part of mother or nurse to the contrary. Hence, mere *paper* rules for breast-feeding are of little value in themselves, except as they can be modified to suit *actual* circumstances. Personally, I take my orders from my little lord and master, as humiliating experience has taught me *he* will *not* take mine from me; so leave him to sleep when he likes, and suck when he likes, and do not wake him up even for his bath.

In order to bring the special duties required in breast-fed infants (maternally), we will begin at the beginning, and take a typical case of a young and healthy primipara who wishes and intends to suckle. The first point we shall have to watch for is the milk-flow, and, practically, you will find much difference in the time that it sets in after delivery; for instance, it may be twenty-four hours afterwards, or even the third or fourth day before the breasts fill, and upon this fact will depend what *ad interim* arrangements we shall have to make for *feeding* our baby, and these again upon the length of that interval, and his wishes upon that point expressed in dolorous cries. Many accoucheurs of the autocratic type command the infant to the breast *at once*—*i.e.*, when the first washing and dressing is over. I also said, and repeat, my opinion that I strongly deprecate any such heroic proceeding, and consider that the mother should have a long repose before being teased with the infant.

Numbers of infants are born hungry and cry till they are fed. What food will we give and how? The mere act of suction as recommended by the "Autocrats" will *not* satisfy him, as we Obstetric Nurses well enough know. The food most usually given, and the easiest obtained, is warm milk and water, in the proportion of one tablespoonful of milk to two of warm water slightly sweetened, and two or three teaspoonfuls will suffice for a feed. *When* procurable, I recommend thin barley water, warm and slightly sweetened, and *cream*—one teaspoonful to be mixed up well with two tablespoonfuls of barley water, given in teaspoonfuls. These nourishments are generally given with a spoon, but, I recommend the use of one of our nipple shields turned glass end up,

and drop in the fluid in measured quantities into that receptacle, and let it *gently* flow along the tube; the infant sucking at the nipple end of the shield, and to be only allowed to swallow a *small* quantity at a time. I have never known this little plan to fail; it is more gain to the infant than a spoon, in which case the food has to be *poured* instead of *sucked* down his throat. We give this nourishment when required before we place the babe in his cot, and, under favourable circumstances, he will *rest* for some hours if *not* sleep, for infants do not often sleep on the *first* day of their lives.

Before the milk-flow sets in we must carefully examine the nipples, for much of the comfort of suckling to both our patients depends upon the careful management of them.

And here I must impress upon my young nursing readers how necessary it is that all breast applications and requirements should be provided beforehand, and hence recommend the plan so wisely adopted by first-class Obstetric Nurses, to *take them with them*, so as to have them at hand as soon as they are required. More especially does this apply to country cases (which generally includes our very best work). These little acts of forethought are not forgotten by your ladies, nor do they fail to appreciate the *pain* and *discomfort* you have *spared* them (from the delay in obtaining these appliances), that would have been inevitable unless they were in *instant* readiness. *Forecasting* is a most valuable quality in an Obstetric Nurse, and marks all the wide difference between method and "muddle."

As soon as the breasts begin to fill, the infant should be applied to them, and *before* doing so I should advise that the nipples be supplied with a little *white* vaseline or glycerine, and when the infant is taken from them, they should *at once* be *wiped dry*, with a soft napkin, and some vaseline used to them. Very frequently, in spite of all care, the nipples become in a few days' time very tender and excoriated, and in this case a nipple shield must be used *at once*, and continued until the nipples are healed. At the first flush of the milk we often have immense engorgement of the breasts, and the infant cannot suck them until they are relieved first by *careful* friction with some simple lubricant. I find camphorated vaseline as good as anything, and drawing part

of the milk off with a breast-pump. As soon as the *tension* on the breasts is eased, the infant can take the milk easily; slings also are a comfort here. With respect to the frequency with which a newly-born infant should be put to the breast, I can tell you but little, for *paper rules* are of small value, because they must be modified to suit circumstances—and the baby! For instance, after a satisfactory meal an infant will sleep for six or eight hours at a stretch; to rouse him up would be of little use, for a sleepy baby will *not* suck, however urgent may be the need for it. If the lady is uncomfortable from an excess of milk, and the baby is asleep, *draw* the milk off, put *some* of it into a clean cup, and stand it in a basin of hot water ready for the infant when he wakes up, and possibly the *Mother* is sleeping. *Never* wake either of them up from sleep, day nor night, a little management will avert the necessity for it. The more they sleep the better for both.

The best way to give the infant the milk is with the nipple shield (reversed). As I have pointed out to you before, never use a spoon, nor, in breast-fed infants, the bottle. Of course these arrangements apply to the little emergencies that occur at the beginning of lactation at a time when both patients require the greatest consideration, and a careful nurse will contrive that neither shall interfere with the comfort and well-doing of the other.

By the second week things will run more smoothly, and it is an excellent plan to get into *methodical* ways, and let the infant have the breast at regular intervals—and in this matter, almost everything depends upon the mother herself; and I think most nursing mothers will admit that *regularity* in the matter of breast-feeding influences the milk-flow, and this again re-acts on the baby's appetite, and they are both ready for each other at the *same time*. At least, such is the outcome of my professional experience of suckling.

Some of our patients are apt to be impatient in suckling, and do not let the infant have his fill; hence he is not satisfied, and his nurse has to get into the bad habit of *hand-feeding*, to supply the infant's needs, by which plan the *regularity* of breast-feeding is interfered with—*confusion* comes in, and when the milk is ready for the baby, he does not want it; and so nurse has to draw it off, and hence all

the real good and comfort of suckling is broken into, and neither mother nor child are really well.

To make this matter plainer to my young Obstetric Nursing readers, we will take a cycle of twenty-four hours any day in the second week after delivery, just as a little illustration of the value of *method* in this portion of our work, even at that early period of infantile life.

We will begin our "day" after baby has had his morning's washing and dressing (say, about ten o'clock)—a process that will almost always have a tendency to sharpen his appetite. His mother had her breakfast nearly *two* hours ago, and there is a good one waiting for the baby—and he takes his time over it, like a gentleman! Repose follows repletion, and slumber both, baby is laid softly down in his cot, and more often than not (if care be taken to induce it), he sleeps for at least four hours, say till two or half-past two p.m., or even more. At eleven a.m. the lady had her milk gruel, and at half-past one p.m. her dinner, and there is one ready for the baby. *After* their dinner (?) (I don't in the least know why) babies are not so often sleepy, they generally prefer being nursed for awhile and looking about them (a laudable desire); but his nurse has other duties to attend to, and cannot allow that kind of thing to go on for more than an hour, when he has to be put into his cot, and, like a philosopher, resigns himself to circumstances and takes another nap. It may be five or six p.m. before he wakes, and if by that time he expresses (by cries) a desire for his afternoon tea, we shall find his mother has one ready for him, having had her own at four or half-past four p.m. After this meal (?) he has to submit to a few manipulations in the shape of changing, and a *little* sponging, and a clean night-gown, &c. I prefer to keep baby up for half-an-hour or so after his evening ablutions, as he *appears* to like to lie on his nurse's lap for awhile, and look around at things in general, and the fire in particular, or he *may* indulge in a little crying. At seven or half-past seven he has to be put into his cot, for nurse has her lady to attend to. About that time she has another *farinaceous* meal—nothing better than some of the various preparations of oatmeal (of which I may say something more farther on) and milk. At nine or half-past nine p.m., our patient must be put comfortable for the night.

And now we come to an important little point in breast-feeding. Our baby *ought*, and will, *if* in an obliging mood, have *his* supper, but if he is *not*, what then? As a rule, the breasts get full at night, the result possibly of the food partaken of during the day, and our patient is weary and wants to sleep, and this is almost sure to be interfered with, if the breasts are over-weighted with milk; if the infant will not suck, or if he does not *thoroughly* relieve the breasts, you must at once draw them with the breast-pump, and *empty them* before the lady settles for the night. I have repeatedly known quite serious breast trouble to arise from the want of this common-sense precaution, from *pressure*; the discomfort of the engorgement leading to restless sleep, the patient turns on to her side somewhat heavily, and the breast gets hurt, and in the morning you may find it tender and inflamed. Do not forget, then, to attend to the breasts the last thing at night; they should also be washed with warm soap and water, well dried, and powdered. When you have to draw off the milk, *take care of it*, and keep it warm the way I have told you; the temperature must not exceed or *fall short* of 98 deg. (blood heat), as you may require some for the infant during the night. I have seen quantities of breast-milk *thrown away* that might and ought to have been utilised for the infant, and cow's milk substituted for it. In case of need, I recommend the barley-water and cream; but if you can any way have breast-milk, use it by all means. It is now baby's bed-time (ten p.m.), and the first half of our mystic period is over—the day-time.

And now we come to that dreaded trouble in Obstetric Nursing, bad nights for the nurse from the baby crying. I think you will find at this early period of infantile life, that *breast-feeding* and *good* management will greatly minimise the evil, at least such is the outcome of my observation. We will assume that our baby wakes and begins to cry at two a.m.—*i.e.*, four hours after his supper (supposing he had been awake to take it). Before using the milk you have kept warm for him, you gently go and see if the mother is awake; if *not*, do not arouse her, but feed baby. Of course he might have required feeding at midnight, if he were asleep when the lady was being put right for the night, and you have the *breast-milk* ready for him then.

If the mother is awake, the baby is put to the breast—two a.m.—and afterwards the patient must have some nourishment; the best is milk gruel, but sometimes a cup of tea with milk is preferred, but I do not recommend it, as it may hinder sleep. The infant must be put back to his cot (*no* walking about with him), and under favourable conditions he will slumber on till the morning. At six a.m. he *may* be ready for an early breakfast, and his mother had hers *earlier* still; it may be quite ready for him, and if so it will about carry him on till nine or ten a.m., when our cycle is completed, and nurse has had a fair amount of sleep during the night part of it.

By the little plans I have brought before you, a nurse can see how important it is in breast-feeding that the mother's meals should be served with the greatest *regularity*, and that they should *precede*, not *follow*, those of the baby—*i.e.*, times of suckling. An infant should not be put to an empty breast, nor when the mother is faint for want of food, nor every time he thinks proper to indulge in “cries,” which are *not* invariably those of *hunger*. In well-managed and favourable cases of breast-feeding, our baby grows like a flower. We can almost *see* him grow. Dyspeptic troubles are very slight, and we can cheerfully dispense with such dubious compounds as “gripe water” and soothing (?) syrup, at least during the comparatively short time that an Obstetric Nurse has the charge of her little patient; and I do not hesitate to aver that in my opinion a good nurse makes a “good”—*i.e.*, healthy and happy—baby (subject to the maternal permission and co-operation, of course).

Before concluding the subject of breast-feeding, I must say a few words upon an important nursing part of it—the lady's dress. I pointed out to you how convenient in that matter was the *jacket* over the ordinary night-dress, to be worn with a long chemise; in cases where the lady suckles, it is still more necessary—I would almost say indispensable for promoting the comfort of the patient. The chemise, also, should be different in shape to those usually worn by lying-in women; it should be as long as an ordinary night-dress, cut low back and front, so as to slip *easily* over and under the breasts during suckling; or tape can be run round so as to fasten the chemise over the chest

afterwards, but it is not absolutely necessary. The sleeves must be short. The jacket night-dress should reach to just below the knees, and be fastened over the chest and down the front. It can be trimmed as much as may be desired, as it in no wise interferes with its usefulness for the purpose required. Mothers and nurses who may have tried this attire will know and feel the comfort it is, not only in suckling, but for the breast care and treatment necessary at those times; it greatly aids all the manipulations required. For delicate women—and to my way of thinking, all women who are suckling—I consider a very light woollen vest, high-necked and short-sleeved (with the *front gores cut out*), most desirable; it entirely protects the chest during suckling from chill, and with the jacket night-gown as well, the protection is complete. Numbers of women “catch cold” when suckling from *not* keeping the chest well covered whilst the infant is at the breast.

Amongst the great (and the moneyed “snobility” who ape them, and would even if the aforesaid stood on their heads) we have breast-feeding by a wet nurse—perhaps of all arrangements the most easy for an Obstetric Nurse, as the former can wait upon herself, and watch a baby at night, thus giving nurse a chance of getting a refreshing amount of sleep. But it must ever be understood that the ladies’ nurse has the *absolute* charge of the infant; we cannot expect to find the professional knowledge in a wet nurse required for the first three or four weeks after birth.

The subject of breast feeding would scarcely be complete without some reference to diet. The point to bear in mind is the freer use of the farinaceous substances, notably all the various kinds and preparations of oatmeal, combined with milk. I consider groats make the most delicate gruel, and the finest Scotch oatmeal the best porridge. King’s patent prepared Scotch oatmeal is serviceable for night use, from it being so quickly prepared. You can mix it with *all* milk, like milk arrowroot, or make it with water, and add milk. A cup of some farinaceous food then should always be partaken of at *bedtime*, in addition to the *early* supper, which might consist of fish, or eggs, &c.; and during the night—say, about 3 a.m. or 4 a.m. And I must call the attention of my nursing readers to the importance of fresh

vegetables as a *daily* adjunct to the *early* dinner as soon as the lady is well enough to partake of a full diet.

There was at one time a strange prejudice against suckling women taking vegetables; but I think that idea is pretty well abandoned. The notion seemed to be that they produced flatulency. I am almost prepared to say there was more without them; and I am confident there is less *medicine* required with them. It is obvious that fresh vegetables tend to keep the blood in good condition, and I do not hesitate to say that that cannot be done effectually, during suckling, without them—combined with daily exercise in the fresh air. (My remarks apply from the beginning of second month up to the end of lactation.) The summer vegetables are the best—peas, French beans, Windsor beans, cabbage if properly prepared and cooked, &c. The winter vegetables—carrots, parsnips (for those who like them), turnips, potatoes, and Spanish onions (cooked) are nice in plain soups and broths (both good for nursing mothers). I think asparagus should be avoided, as it might taint the milk. Flesh foods are the least valuable in suckling, and should be used sparingly, and at the mid-day meal (with vegetables) instead of later in the day.

CHAPTER V.

HAND FEEDING.

CONDITIONS THAT RENDER IT NECESSARY—FOOD MAY BE GIVEN TO INFANTS IN A SOLID OR FLUID FORM—MODES OF FEEDING—SUCTION—SPOON FEEDINGS—FEEDING BOTTLES, KINDS OF—COW'S MILK THE ONLY PERFECT SUBSTITUTE FOR HUMAN MILK—COMPARATIVE ANALYSES OF BOTH—ASSIMILATION OF COW'S TO BREAST MILK—MILK SUPPLIES, DIFFERENCES OF—MODES OF PREPARING AND STORING MILK FOR INFANTS' FOOD—SUBSTITUTES FOR, IN ADDITION TO COW'S MILK FOR INFANTS—DESCRIPTION OF—PROPERTIES OF PEPTONISATION—INSTRUCTIONS FOR INFANTILE FEEDING—ALL ADDED WATER TO BE BOILED BEFORE USING—MIXED FEEDING, PART BREAST, PART HAND—WHY RESORTED TO—HOW TO MANAGE IT—DESIRABLE FOR THE MOTHER'S WELL-DOING.

I HAVE read somewhere that "next to a victory comes a masterly retreat," which I take to mean, minimising the evil effects of defeat by anticipating it. And we know, as a matter of history, there have been retreats almost as renowned as victories. In the present instance we shall have to accept a total defeat of all Nature's wise plans and provisions, and make the best of it; for we shall have to take her task into our own hands, and feed our little patient from birth until we leave him. In Obstetric Nursing this matter of hand-feeding is one of great interest, and we will give the subject the fullest attention. Among the causes that most frequently lead to this unnatural proceeding are (1) Social considerations (these are sometimes, as I told you recently, met by foster nursing, but not always); (2) Constitutional causes in the mother, such as phthisis or serious blood-taint from other diseases; (3) Accidental causes—viz., severe puerperal hæmorrhage, or dementia. It is a matter of little consequence what the cause may be, as the

result is the same in all cases—the substitution of an artificial for a natural mode of aliment. Nutriment may be given to an infant in two forms—*solid* or *fluid*. The former has been for generations a prolific source of infantile misery, disease, and death. The “pap” of our forefathers and the “sop” of more modern times have destroyed more lives than bullets; and even now the baneful practice of starving infants upon solid food largely prevails among our urban and rural poor alike. Again, this food (?) was given in the only and worst possible way—with a spoon, and crammed down the infant’s throat—much in the way a village henwife crams her fowls destined for the spit. The dyspeptic effects of this method of feeding can be readily imagined. It would take folios to describe them; the two most usual results being flatulency and constipation; and these, again, were met by palliatives rather worse than the initial error itself. For the former, carraway, or aniseed, is usually resorted to; and “aniseed sop,” with *abundance* of sugar and the *merest modicum* of milk, is quite a pet preparation for the “wind.” For the “gripes,” or intestinal colic, *gin* in the sop is held in high request; for constipation, the immemorial castor oil, in combination with those *poetic* adjuncts—the syrups of rhubarb, buckthorn, or white violets. Evidently the farce of feeding can no farther go; and it is really very ungrateful of the babies, and quite too bad of them, to evince so little appreciation of these exquisite efforts for their *good*, as to die of diarrhoea, bronchitis, or “fits,” as they do in the most mysterious manner at an early period of their careers. This baneful practice of giving *solid* food of various sorts to newly-born infants prevailed almost universally (with notable exceptions) for generations; and it is only quite within the range of the present century that medical men advised the substitution of milk for *any other nutriment whatever* for hand-fed infants, and this was given with a spoon, and (*carefully* done) the infant can swallow it much better than *solids*. Even now, under certain conditions, we have to give our babes milk with a spoon.

The next advance in hand-feeding, and a very important one, was by suction—the only true way of giving infantile nourishment—because it is only by this means the saliva

can be completely mingled with the food. The first thing required was a teat (a sort of artificial nipple), and this had to be fastened to a glass vessel, somewhat inaccurately called a bottle. The primitive milk receptacle was flat, smooth, rounded at the sides and one end, and in shape not unlike a fish—being wide in the middle, narrowed at the end (tail), and narrower still at the neck. In the middle of the upper side of the bottle was a round aperture about the size of the mouth of a wine bottle, into which the milk was poured, and then a cork put into the opening to keep the fluid from spilling. It was to the upper and narrowed part of the bottle (the neck) the teat had to be secured; and in those days a great deal went to the teat, which had to be home-made, and it was not every nurse or mother who could make them well.

I must premise that, in respect to the venerable article I am describing to you, I shall draw upon family traditions, and remote personal recollections; and shall be happy to receive any further information of a like kind from my readers. The material used for the teat was either chamois leather or new parchment, the former being the more preferred. My young readers must not imagine that it was merely common *wash-leather*, such as is used by the obliging “young ladies” of to-day who kindly condescend to clean our plate for us; but a very superior kind of skin, costing half a guinea each, beautifully soft, and almost velvet-like in smoothness. In shape the teats were not unlike those of to-day, or rather, shall we say the reverse, for the modern article is a copy of the old. They were cut in *two* pieces, and very neatly sewn together all round, leaving a little aperture at the top for the milk to flow freely through; at the lower end of each *side* of the teat a little space was also left, so that it might the better fit over the mouth of the bottle, and be *firmly* fastened to the neck with a piece of purse-silk wound round and round the neck. The parchment teats were made and secured in precisely the same manner, and many mothers preferred them. The art of teat-making was *not* to make them *too long*, or they tickled the back of the baby’s throat, and made him sick: and this is just the fault of more than half of the india-rubber teats of to-day. Viewed through the light of our

modern spectacles, we can see that this quaint feeding contrivance was full of faults, but I confess to a kind of ancestral liking for the dear old thing, for "beautiful women and brave men" have taken their early sustentation from it, together with many thousands of the *early* subjects of our Queen. When the infant had to be fed he was placed on his nurse's lap in a half-sitting position, his head resting on one of her arms, whilst she held the bottle and fed him with her other hand.

I have just described to you how the teats were made and fastened on. Now it used to happen that if they were *not* made secure, a vigorous baby would suck them off, and, unless prompt aid were at hand, there was a grave risk of suffocation from the teat getting into the wind-pipe. As a matter of history, this disaster *did* happen more than once; and I am of the opinion that a knowledge of the possibility of this accident led, amongst other causes, to the almost complete effacement of the old method of feeding quite thirty years ago. We shall have a word or two to say about its revival in present times, and see wherein it differs from the original article, to which latter we will for the present direct our attention.

The first thing that strikes us as defective in practice, though good in *theory* (suction), is the teat itself; not that I consider our modern *materials* for it much (if any) better than the homely contrivances I have just described to you. But the old-fashioned teat was not safe, for the simple reason that there was no *point d'appui* for the infant's tongue when sucking, as there is in the natural nipple; and I have told you what might possibly happen for the want of it. Again, there was no possibility of *regulating* the milk-flow through the teat, except incessantly removing it from the infant's mouth—a process he resented by sucking harder than ever to keep it in. And herein we see a perversion of the natural method of suction, when the nipple need scarcely be removed from the mouth until the infant is satisfied, when he stops of his own free will, and drops the nipple. There was another disadvantage; the infant had to be *taken up to be fed* day and night. Supporting him on one hand, the Nurse had to feed him with the other. She had no power

to control the milk-flow; the infant had no power over the teat; so it had to be constantly drawn out of his mouth to avoid choking, and there was no end of "slobbering," that nurse could not prevent. A right comforting (?) process this at any time, especially on a cold winter's night, and one *beautifully* in consonance with the natural methods of suckling, where, as we know, *warmth and comfort* are bounteously provided for by Dame Nature. With a few slight modifications—a sort of distinction without (much) difference—our friends the "Autocrats" are reviving these bygone conditions; and some of the reasons (?) that have led to this "Irish advance" will be touched upon when I have brought before your notice the modern methods for hand-feeding.

The next advance in hand-feeding contrivances, and a most important one, was due to the discovery of that valuable natural substance, caoutchouc, which, under the familiar form of india-rubber, is so largely used for all sorts and kinds of nursing requisites. About thirty years ago it was introduced for hand-feeding purposes in the then novel form of a small tube—soft, flexible, and non-frangible; and it is to this simple and scientific appliance, in conjunction with other adjuncts, that we find the most satisfactory method of infantile feeding as yet known to us. Now it is in this afore-said *tube* that all the *good* and all the *evil* of our modern method of bottle-feeding centres; the latter being due, not to any inherent defect in the principle, but to the practice—from the carelessness and neglect of those who use it (or abuse it); and it is for those causes that we find one of the strongest objections for its temporary abandonment in Obstetric Nursing. I use the word "temporary" advisedly, for I feel sure, if carefully used, it will soon recover its old supremacy. Hence we will give the matter a little thoughtful attention.

There have been two charges brought against the india-rubber tubing in recent times: (1) The difficulty of keeping it perfectly clean; hence the risk of septic mischief. (2) That nurses were apt to allow the infant to feed himself—viz., not controlling the milk-flow for him; hence dyspeptic troubles, from overloading of the infant's stomach, or suffocation, from the milk getting into the windpipe. The writer

has known this happen of her own knowledge. Still, I cannot but think that the greater part of my nursing readers will agree with me in the opinion that these objections tell a great deal more against the *nursing* than the tubing. With regard to the first, our safeguards are, of course, antiseptics. I recommend Condyl's fluid in preference to any other—one fluid drachm to a quart of cold water for immersion and continual use, though it may sometimes be necessary to *double* the strength. As soon as the fittings have been done with—that is, after every feed—they should be immersed in the solution. But this is not all. The tubes and teat must be cleaned *inside* as well as out; and to do this we use the brush provided for us, dipped in the Condyl. *After* we have passed our brush through them we must wash them out—viz., by attaching one end of the tubing to a *small glass*, or tin funnel (which you can keep from rusting by rinsing in boiling water, and *drying* at once), and sending a copious stream of the antiseptic *through* the tubing, teat, and union. I think you will find this plan an *improvement* upon *sucking* through the tube to clear it, which some nurses adopt. Whenever the india-rubber fittings become in the *least* foul, *destroy* them; do not attempt to *purify* them. Our measures have an aseptic, not an antiseptic, object in view. As well as the tubing, the teats (much the same shape as in old days) were also made of india-rubber, and possessed the advantage of the elasticity that is its special property; hence they could be put upon the stretch, and made more secure to the fastenings than formerly.

Before entering any further into the subject, I must remind my young nursing readers that all the changes, alterations, modifications, and improvements upon those that have taken place during a quarter of a century are primarily due to the introduction of the india-rubber tube. In order to bring this matter more clearly to your minds, I will describe, and criticise, point by point, one of our modern feeding contrivances, and I think you will find that Messrs. Burroughs and Wellcome's Thermo-Safeguard Feeding Bottle meets all the highest requirements of scientific hand-feeding.

You may ask, "What has science to do with the

subject?" Well, everything that ignorance has *not*. I must ask my readers to follow me in imagination whilst I take to pieces the various parts (six in number) of the admirable contrivance that lies on my writing-table, and which we will put together as we go on.

We will begin with the india-rubber tube, which we have just detached. It is ten inches long, beautifully fine and soft, and about the calibre of a goose-quill. We notice fixed round the lower end of it a small india-rubber band, about an inch wide, and turned over at the top; this forms a kind of stop, and not only prevents the tubing from slipping through the stopper of the bottle, but serves to keep the glass tube we shall presently fix to it *in situ* in the bottle, so that it cannot slip about. We now pass the upper end of the tubing through the lower end of the central aperture of the screw stopper, and have to attach the teat to it by means of a simple contrivance called a "union," which, in this instance, is (as it ever ought to be) of glass, and it is somewhat different in shape and far stronger than those we used to have. In the centre are two circular parallel ridges, which serve as stops to the tubing at one end, and the teat at the other; and we observe that the two ends of the union are not quite alike, the one being rather larger and rounder than the other. To the former we will now fix our tubing, to the other the teat, and pass it through the circular bone disc that fits round the neck of it. I do not know by whom, nor exactly when, this simple, sensible, and admirable little contrivance was introduced into our feeding-bottles; but this I do know, it is a most important feature of them, for it not only serves to facilitate the natural process of suction, but completely does away with the risks and discomforts that were inevitable in the old-fashioned teats. We now have to attach the glass tube to the lower end of the tubing, just below the band. This tube is four inches long, and just fits inside the bottle. About two inches from the bottom end is fixed a little india-rubber band, that protects it from breakage, and also helps to keep it fixed. We notice a slight indentation in the tube, dividing it into an upper and lower portion: in the latter we see a small piece of glass, open at one end, round, and closed at the opposite—that moves up and down in the little canal in which it is imprisoned; for it cannot

escape from the lower end of the tube, which is slightly narrower than the upper part. This little valve rises and falls with the suckorial efforts, and thus *regulates* the flow of milk from the bottle to the tubing, cutting off further supplies until needed—that is, when baby has had time to swallow that sent on to him. During a pause, the milk column presses on the little stop, and opens the tube for more to flow in. This ingenious contrivance safeguards our baby from the risk of choking from a too-rapid milk-flow.

So much for the fittings; we have next to consider the glass bottle.

The bottle to which we have just put the fittings, is oval in shape, flattened on the underside to keep it steady when laid down, and of course narrowed at the neck, which is bevelled to fit the screw-stopper, round which is fixed the india-rubber washer, to keep it firmly in. Down the centre of the front and upper side of the bottle a thermometer is embedded, which scales from 60 degs. to 140 degs. Just below the 100 degs., a little arrow is fixed at 98 degs. (blood heat), the normal temperature of breast milk, which can be accurately ascertained by means of this scale. As a matter of practice, I recommend that the food be mixed at a higher temperature, say 120 degs., *before* it is put into the bottle, and allowed to cool down to 98 degs.; or if there is hurry, by dipping the bottle into *cold* water. There are only two ways of raising the temperature of the food *in* the bottle—either by adding boiling water to it, which upsets all the *proportional* arrangements so important in hand-feeding, or plunging the bottle into boiling water to the imminent risk of breaking it, from the great thickness of the glass. I also deprecate the plan of keeping the food hot *in* the bottle, upon hobs or in ovens, as is so often done. There has been a contrivance introduced lately for keeping the food warm *in* the bottle, a sort of hot box, on the lines of the old “cosies” we used for keeping our tea hot *in* the tea-pot—that is better, perhaps, than hobs or ovens, but for my part I do not advise any such “make-shift” arrangements. A nurse can always keep water boiling in the day, and there are admirable contrivances for doing so at night, or if milk alone is required, you can boil that. Mix your food for baby *fresh*, and *in small quantities* at a time, and give what is left over to the cat

or her kittens; they are the best of "cosies" to keep it warm.

We must now return to our bottle. Its fluid capacity is eight ounces, graduated into ounces and half ounces on each side of the thermometer, like a medicine glass. By means of this scale a nurse can always be sure of the proportions of the infant's food, and also know how much baby takes at a time, and hence get a good idea of how much to mix for a feed; and to my knowledge we have no other way of being sure of these facts, except with the bottle I have described to you. When you mix the food *in* the bottle, put the cold milk in first and the hot water afterwards.

With regard to keeping the bottles *clean*, the first point is not to permit them to get *dirty* by allowing the milk to remain in them. Pour out all that is left over from a feed into a clean jug, and at once rinse out the bottle with *cold* water. It should be well washed once a day, inside and out, with hot water and Californian borax, or the borax dry soap will keep them in excellent condition and clean. You can rinse out when necessary with the Condy solution, and, if the weather is sultry, keep them immersed in it till you want them for use. This is a good plan in big towns, notably London, under all circumstances.

I think I have now brought before my sister workers all the points of the Thermo Safety Feeding Bottle, and leave them to think them over and judge for themselves. As Obstetric Nurses you will have to familiarise yourselves with every form of hand-feeding contrivances, including the tubeless bottles now in much repute in certain circles.

We have dwelt upon most of the practical points of *mechanical* hand-feeding, and must now discuss the *food* of our infant, assuming, of course, that we have to feed him from birth.

By the general consensus of medical opinion, cow's milk is regarded as the *best*, if not the only, substitute for breast milk for the newly-born, and to that we will first direct our attention.

In order to bring before the minds of my young readers more clearly what I shall have to say to them, we will copy from our text-books, and carefully compare with each other,

a table of the constituent parts per cent. of woman's and cow's milk respectively, viz. (Dr. Winter Blyth):—

	WOMAN.				Cow.	
Water	88·00	...	...	86·87
Solid matters	12·00	...	...	13·13
			<hr/>			<hr/>
			100·00			100·00
			<hr/>			<hr/>

The Solid matters consist of:—

Milk-fat (Butter) ... ..	...	2·90	...	...	3·50
Casein (including albumen) ... ..	...	2·97	...	...	4·75
Milk Sugar ... ..	...	5·87	...	...	4·00
Salts ... ..	...	·16	...	...	·70
Other matters ... ..	...	·10	...	...	·18
		<hr/>			<hr/>
		12·00	...	...	13·13
		<hr/>			<hr/>

These tables are full of interest, for we see by them that although Nature uses a similar *material*, and the same elements, the proportions differ, and are supremely adapted to the infant needs of calf or baby, as the case may be, and our task will be to adapt the *food* of the former to the wants of the latter. We will begin with the albuminous element *casein*, for it is in this substance that nearly all the interest and quite all the difficulty of hand-feeding centres. We notice at a glance that it is nearly twice as abundant in cow's as in woman's milk, and also that the proportion of *water* is considerably larger in *human* than cow's milk—the quantity of fat (butter) much less; hence it is said cow's milk is too strong and too rich for our baby, and amongst other measures we must *dilute* with water. As bearing upon our subject, we will put the matter in another way, viz., that the milk globules containing, of course, the fatty particles float in a larger quantity of fluid (whey) in human than in cow's milk; and we will also bear in mind that *casein* is *not* soluble in water in the way that salt and sugar are, but *insoluble*, and that it retains its *special characteristics*, however much we may *dilute* with water.

With respect to the most abundant constituent of milk—the aqueous—we see that the excess of water in human milk

over cow's is but slight, and we add water to thin it down. Sugar is the next ingredient we will consider. It is, like water, more abundant in human than cow's milk, 5.87 being the given proportion in the former; and this is *milk sugar*, and not the cane sugar we add, as a rule, to cow's milk, though many medical writers affirm that sugar of milk should be used for the infant's food. Speaking generally, it is made far *too* sweet. So far, we find that *added* water to the cow's milk has left the *casein* much as it found it, or rather shall we say the casein *left* the water, and took away with it the fatty particles that we *failed* to *find* or skim off the cow's milk before we diluted it. Of all the elements of milk, we can best assimilate the oleaginous, by simply subtracting from the cow's milk, in our test-glass, any *superfluity* we may have the good fortune to find.

With respect to the proportion of the solid matters, including the all-important mineral substances, we find them as 12.00 in human milk to 13.13 in cow's, the same ratio of proportion as water, but reversed; and we can understand that nature requires a larger amount of *bony* material for a calf than a baby. These mineral constituents are for the most part held in *solution* in the milk, and made use of with the casein to consolidate the frame, and we can assimilate the proportions by adding *water* to the cow's milk we prepare for baby, as we can make it *sweeter* by adding sugar. The salts or saline ingredients are also diluted with water, they are as two in human to six in cow's milk.

To recapitulate, cow's milk can be assimilated to human milk in its aqueous, mineral, and saline ingredients by *adding water*, to its oleaginous state by the *subtraction* of the fat or butter, to the *saccharine* by the *addition* of sugar; but it remained for modern science to deal with the albuminous element (casein), with which at present we have done little.

I will now just digress a little, to bring before my young nursing readers some of the effects of *tubal* or modern bottle feeding at the time of its first introduction into Obstetric Nursing, more than a quarter of a century ago, that they may the better judge for themselves as to how far we have advanced or retrograded since those early days of the invention.

There is one point indisputable; the popularity of the new method was immense, and in a comparatively short period of time the bottle was almost universally adopted by all classes of the community. Evidently, then, the new contrivance met a general want, and it is much to be regretted, though scarcely surprising, that it came to be misused and abused in careless and ignorant hands. The food used was, of course, cow's milk, the routine proportions being, for newly-born infants, *one-third* milk and two-thirds hot-water, sweetened with loaf sugar; and as the "lumps" are not *invariably* the same size, it came down to the cookery-book direction—"sweeten to taste" (nurse's). The quantity mixed for a feed was, one tablespoonful of milk, *two* of water—an ounce and a half altogether. This was sometimes given at birth, and sometimes not until many hours afterwards. The directions as to repetition were not often laid down by the doctor, so the matter rested with nurse and baby. I have known infants kept on this scale of diet for two or *three* weeks after birth, so great appeared the apprehension of giving the milk too strong! At the fourth week they ventured to increase the proportion to half and half, and many nurses never gave it any *stronger* during their time of attendance. We may take this formula as fairly representing, almost universally, the method of infantile feeding in England about twenty years ago, and we must remember that it was a substitution for the *solid food* that up to that time was but too frequently given to infants *in all classes of the community*, and a *great* advance it was, but not advanced enough.

Let us see how it worked. And here I must remark that every Obstetric Nurse should understand and have provided for her use a lactometer and test-glass, and be able to subject the milk bought for baby to *daily* examination. A nurse may as well be without her clinical thermometer and *guess* temperatures, as attempt to *judge* of milk by observation alone, and we know that at that period of the century our "monthlies" knew *nothing* about either of these scientific contrivances.

We will begin with the *milk*. In country houses it could be obtained fresh and pure, and so far the advantage was immense, and we may dismiss any suspicion of impurity

(except, perhaps, *organic*) from our minds; but as the larger part of our little patients are born in cities and towns, we will confine our remarks, for the present, to the difficulties that used to beset us in former days, and, to a large extent, do still—the urban milk supply; and if I appear to dwell upon the matter somewhat tediously, I must ask the kind forbearance of my readers, in consideration of the immeasurable importance of *pure milk* for the food of our infants, pointing out some of the obstacles that stood in our path in former days. They can the better judge for themselves to what a beneficent extent modern enterprise and advanced sanitary knowledge have helped us in this difficult matter of infantile nutrition, which I have ever regarded as one of the most practical and interesting portions of Obstetric Nursing. We will confine ourselves for the present to *urban* milk supply, and traverse a period of about twenty years, when our modern feeding-bottle was in almost universal use. There were two sources of supply in London and other great cities. Town cows were kept by town milkmen, and housed for nearly all the year round in town cow-sheds, for we know, for instance, that the heart of London is a long way from the fields, and the dairy(?)man retailed the milk to his own private customers; he never dreamed of *buying* from the country, and if supplies fell short, the town water made good the deficiency, the cream (?) being conspicuous by its absence *in* the milk, and its presence (?) (on order) in a curious *conglomeration* contained in *very* small cans that adorned the outer margin of Mr. Chalk's large cans. When a town baby made his appearance in the household, Mr. C. became an important personage, and entered into a sort of unwritten covenant to supply the new-comer with milk from *one cow* only, such being the medical direction. This milk was brought in a separate can, and we had to take it, like our fellow creatures, as we found it. Nurse had the charge of and kept it for baby's food, and in those days it was considered that in this *keeping apart* of the milk for a special purpose, *all* was done that could be done—save its further dilution with water! Miles upon miles of London streets were supplied with milk upon the lines I have just pointed out.

The next advance in urban supplies, and a very great

advance, was the establishment of the metropolitan dairy companies, the most of whom had suburban *farms*, and one of them I know was (I daresay it is a railway junction now) simply perfect in all its arrangements. Like the dairyman, the dairy companies retailed the milk to their own customers, and sent it out from the farm by their own men, and it was the produce of their own cows; it was *not* bought up first and sold afterwards. For the most part suburban residents got the benefit of these admirable innovations, although many town families were supplied as well, and in that case our baby's milk was sent and sealed in a separate can, and guaranteed to be always from the same cow—according to routine. I am not prepared to say it was immaculate, but it was immeasurably better than Mr. Chalk's, and, as a consequence, less deteriorated by the *water* nurse had to put to it. And thus far we can see the milk purveyors both worked on similar lines—they dealt in the produce of their own cows. The next move was the appearance in London and large provincial cities of *milk buyers*, as well as sellers—factors, who bought up milk from farmers all over the country and had the supplies sent to them daily. Unlike the dairy company, these middlemen did not *distribute* the milk; they sold it retail in their shops, and wholesale to smaller dealers. There was no particular pains taken to secure *quality* or purity, so long as the milk was *saleable*—that seemed to satisfy all requirements. One result of these arrangements was to “muddle up the milks,” not only of different farms, but different cows, and our instructions to give baby the milk from *one cow* was impossible of attainment. If these commercial undertakings concerned cabbages, instead of one of the most sensitive, perishable and important articles of food, there would be nothing to say about them, but, until the Adulteration Act came into force, the public had no protection at all from unfair trade practices; but now milk sellers must take out licences, and have their shops and depôts registered for purposes of sanitary inspection, and a salutary control *can* be exercised over the food of our young and our sick—both helpless members of the community. Some years ago a dairy company was established in a large provincial city, which not only undertook to purvey and distribute milk, but *guaranteed its purity* by carefully testing

all the milk sent in to the dépôt *before* it was sent out to the consumers. This plan has answered admirably, and, speaking from personal experience, I do not think a finer or purer supply of milk could be found in any city, and here, at any rate, our babies can have *pure food*.

Let us return to our subject. How did the *new* system of hand-feeding affect infantile health? I have pointed out *how* the milk was used, and its oftentimes doubtful quality. One of the results of this method was soon made apparent, and nurses and mothers observed that the bottle-fed babies were always wet, day and night, and cots and clothes were equally saturated; in fact, nature was giving us a lesson (but it took us a long time to learn)—viz., we were embarrassing her with more of a given substance than she required for the infant's need, and there was only one way to get rid of it, for babies never perspire, except from the head (and not often there); their skin is *warm* and *dry*, or cold and *dry*, such as the hands and feet, but *not* moist. How far it was wise to thus overtask the urinary organs in tender infancy I leave any mother or nurse to think out for herself. There is one thing we both know, this constant drenching greatly adds to the miseries and discomfort of chafing the genitals—at all times a source of trouble to us to avoid or deal with.

Again, nurses and mothers complained that the infants did not appear to have their hunger satisfied with the milk-and-water diet; the curd was frequently ejected from the stomach, and in the intestine seemed to give rise to pain, and consequent crying. I have told you how variable and unsatisfactory the *bought* milk was in those days, and that no one ever had the slightest idea of *testing* its purity or *strength*; and as for cream, there *might* be enough in a pint, if left to stand for twelve hours, to cover a sixpence. One dire and early effect of this *impoverished* milk (?) was the introduction of *other substances* as substitutes for *good milk* which in towns could not then be obtained; and here again nature had to be balked in her ways and works.

The direful question, what shall we *put* to the milk (and water) to *satisfy* baby? was asked in millions of homes, with what (oftentimes) distressful results I need not repeat. The new bottle was used to *give* the food; so far the method was good, the results bad.

The subject upon which I am about to enter is most displeasing to my pen; I write against the *grain*. I have not a particle of faith in any one of the substances I shall bring before your notice as *food* for the newly born, but which we all *know* are daily and hourly thrust down their innocent throats. A knowledge of these widely-spread and mischievous practices is necessary in practical Obstetric Nursing, and *to protest against them*, the duty of every woman engaged in it; they prevail more amongst our working classes than other grades of society, but they are *not* absent amongst their social superiors.

We will class these deviations from the path of natural nutrition into (1) substitutes for, and (2) additions to the *milk* food that ought never to be displaced. The most prevalent "substitute" is the iniquitous "sop," of which I have said enough, and under "sop" I include the biscuits, rusks, "tops and bottoms," soft cakes, used in lieu of bread, and which as often as not are mixed with *water*. The next and only "substitute" I shall touch upon is one that to many of my young nursing readers it may appear quite a misnomer to so classify. I allude to condensed milk, that over twenty years ago was introduced for hand-feeding. At first it was called Swiss condensed milk, made from the curd or casein of goat's milk, mixed with a large quantity of sugar to preserve it—a sort of milk jam—and sold in cans; and to my mind it was the best preparation of the kind we ever had. It possessed so many apparent advantages over cow's milk that it was small wonder it was so largely used in place of it. Among the most obvious points in its favour were regularity of supply, uniformity of quality, perfectly reliable in hot weather (when fresh milk often fails us), ready for use at any moment, could be taken wherever baby went, easily prepared. Nurse had only to add the hot water and the food (?) was ready at once; and really it almost seemed that in the face of the *new* preparation, Dame Nature's antiquated arrangements could be dispensed with. Thousands of infants were fed on it, the usual results being (especially in towns) that we had "fatness" without firmness, imperfect development of the bony structures, and "flabbiness" in the muscles that clothed them; the skin was white instead of pink, hot instead of cool, and

our baby had a tendency to take a chill on the slightest exposure, and infantile bronchitis but too often befell the little victim, especially amongst the poorer classes of society, by whom the condensed milk is held in much repute, and its present cheapness is, of course, a great inducement to its use. For a number of years I have protested against its being *substituted* for cow's milk for newly-born infants; the minimum of harm occurring when it is given in change *with* breast-milk. Nay, I even have the hardihood to assert that it is not *milk* in the full sense of the word, and hence *not* suited for infant nutrition. A very little reflection will show *why* this is so. The condensed or desiccated milk is prepared from the *solid portion* of the natural milk of goat or cow, but the most abundant of all its constituents, the aqueous holding in solution mineral and saline matters of the highest value for consolidating the infant frame, is abstracted from it; nor must we imagine that the water we *add* to the condensed milk really replaces the water in natural milk; for although *whey* is to an immense extent water, *water* is in no sense *whey*. Then, as to the important fatty constituent of milk cream, what *evidence* we have of its existence in prepared milks you can judge for yourselves by the following experiment (No. 4):—Fill your test-glass with warm water, dissolve in it two teaspoonfuls of your condensed milk, stir it up, and leave it alone for twelve hours at least; then examine the fluid; the *cream line* reaches just below O. That is *next* to nothing, and we mixed it in the proportion required for baby's food, besides which the mixture is intensely sweet. Upon the whole we are worse off than we were with "Mr. Chalk." We may say of condensed milk that it does not fulfil the requirements of infantile feeding, being deficient in the saline, poor in the fatty, and over-abundant in the saccharine constituents of milk.

We will now turn to the additions to the natural aliment of infancy that are given under the impression that milk does *not* satisfy baby. For the most part, the cereals are selected as the necessary (?) pabulum, wheat, oatmeal, and barley being the most frequently used.

Let us begin with the wheat or flour, which should be used cooked, and there are two ways of doing this, baking or

boiling. One of the oldest preparations of flour, to my knowledge, was called Hard's Farinaceous Food. It was reputed to be made of the best wheat, and the flour was carefully baked a light brown, very finely sifted, and tightly packed into paper cases of various sizes—pound or half-pound packets or even less. A teaspoonful of this food was mixed with milk and water, boiled, and made sufficiently thin to be taken from the bottle of the period as a feed for baby, often only a week old. The other way of preparing flour—boiling—was done at home, and in this wise (to my knowledge), though there are doubtless many other ways I do not know of. The flour used was always of the finest quality, and had been kept very dry. It was sifted through fine muslin, and put into an ordinary white-rimmed pudding basin that might hold say a pound, filled to the brim, and then covered with a clean, white cloth, tied very tightly over the top of the basin, which was placed in a large saucepan, and sufficient water poured in to reach to the rim of the basin, but *not* to cover it. The lid of the saucepan was put firmly on, and sometimes a weight placed on to keep it well down. The flour was cooked, or rather steamed, in this way for twenty-four hours—twelve one day and twelve the next. The basin was then taken out of the saucepan and placed in the oven, covered over with a plate or saucer put over the cloth and kept there for two or three hours, taken out, but not opened until the following day. When the flour was turned out of the basin it was a beautifully white, fine sort of paste, that crumbled into powder when touched. It was put into a clean jar, kept in a *dry* cupboard, and used in the same proportion and in the same way (for tender infants) as the other food I have just told you about. There was one advantage, to my mind, in these homely preparations over those of *commerce* (that applies equally to sausages and meat pies)—we *did know* what it contained, and we could make sure of the very best material for our purpose. I have a high opinion of this farinaceous food for infants five or six months old, but *not* as it was (and is) given as food for the newly-born, week-old and month-old babies. With respect to the other cereals, barley and oatmeal, they are, for the most, given to the newly-born in the form of thin gruel or barley water by the bottle. With respect to the

latter, it is serviceable on occasions. With respect to the former, I do not advise it. I find it too heating, and apt to act too much on the kidneys. Before leaving the subject of "additions" to our baby's food, I may mention that their name is legion; time would fail me even to enumerate them. For the most part, we may infer from their taste and appearance that they are composed of farinas, of some one, or many sorts combined, and for this reason I do earnestly exhort all nurses (Obstetric) and mothers to leave it alone as food for infants *in lieu of cow's milk, or mixed with it*. My readers may ask, Why? and as this question comes before us every day of our lives in our portion of nursing work, we will give a little attention to the matter. All the farinaceous substances I have just mentioned contain albumen, and so does casein; but they also contain, amongst other elements, gluten or starch, which casein does *not*, any more than flour contains sugar, therefore we may feel perfectly assured that Nature has no need for starch in the food of the infant mammalia; no milk contains it. When with heedless hand we interfere with her divine adjustments, and throw upon the infant frame a substance for which it has no need, and for which it has no provision, Nemesis ensues that appals us to dwell upon, and holocausts of innocent lives are sacrificed to appease it!

Amongst the *purely starchy* substances that are given to infants, the lethal arrowroot holds the foremost rank as the *destroying* angel (?) of infancy; it is used, not only as an addition to milk, but as a *substitute* for it, mixed with water and any quantity of sugar. I have known and seen tender infants fed (?) by the bottle upon this *criminal diet*, with just perhaps a "*colourable* pretext" of milk; and wretched are the lives they live, and cruel are the deaths they die, and all this misery brought about by the crass ignorance of mothers! Sago and tapioca are not often given to infants, but the former used to be in some favour as a spoon food, but we know they are both utterly bad.

The only form, then, in which *solid* food can be assimilated by the infant system is in the curd or *casein* of milk. It is so hard to persuade women that milk contains one *solid*, hence there is no need to *add* another, that I frequently *decompose* some milk to try and convince them of it, and

point out to them that baby is continually doing the same thing in his stomach. The most *perfect* form of infant aliment is normal breast-milk, but our task at present is to deal with cow's milk for baby's food; and that point, and some practical suggestions for hand-feeding from birth, will be our next subject.

In order to bring before my young nursing readers the absolute supremacy of pure cow's milk as a substitute for breast milk over all substances whatever, I will briefly outline some of the reasons why this is so, and ask for their thoughtful attention to this important matter, bearing, as it does, upon infantile life and health. We will first consider the solid constituent of milk, the curd or casein, which is one of the albuminous compounds, as are also the white of the egg, and the serum of the blood. But casein differs remarkably from these two substances, for it is *not* coagulable by *heat*, like the first, nor *soluble*, like the last; and it has, moreover, a remarkable affinity for the *mineral* or *bone-forming* constituents contained in the whey, or watery portion of milk. I must particularly emphasise this matter of *bone nutrition*, if I may so call it, for it is almost impossible to over-estimate the importance of a healthy *frame-work* upon which to build up the infant system, and we must begin at the beginning of infantile life. No other substance contains the necessary *mineral* materials in such absolute perfection as the milk destined for the food of the infant mammalia.

Casein also takes up the fatty particles of the milk, which in combination with it are so important for tissue-forming purposes, and here again the oleaginous, like the mineral constituents, are in exact proportion in the milk prepared for infant nutrition.

Casein can only be coagulated *in* the infant stomach by the action of the gastric juice, and *out* of it by a preparation called rennet, but these two processes are not identical, for the former not only instantly coagulates the casein, which is a *preliminary*, not a final step, in the path of nutrition, but it afterwards acts upon and *dissolves* it, so as to render it readily assimilable, and this effect is produced by the action of an inorganic compound that physiologists call pepsin; and when this action is simulated by science *out* of the

stomach it is called peptonisation, or pre-digestion; and in nursing the substances most frequently acted upon are the juices of meat (broths home-made, not "preparations"), and milk. In the former case the albumen is cooked before we peptonise, in the latter we peptonise *first* and cook afterwards, and before we add any farinaceous substances that may be required with the milk. Peptonisation, then, may be defined as a pre-digestion of certain alimentary substances, by which they are rendered more readily assimilable when they enter the stomach than would be the case were they not so treated. Peptonisation, then is predigestion; but predigestion is not exactly peptonisation, for the former is as old as civilisation in the form of cooking—that is, subjecting food to the action of heat before it enters the stomach, and thereby rendering it more suited to the action of the gastric juice, and not lowering the *temperature* of the stomach by taking *cold* food into it; and we never by any chance give an infant cold food—it should never be less than blood-heat. The most remarkable instance of predigestion is to be found in the immemorial custom of *leavening* flour to make *bread* (an alimentary subject of foremost importance to the health of man), and this singular process is due to the rapid growth of the yeast-plant when mixed with flour and water, and submitted to slight heat (which is called setting the sponge) for a certain time, when the dough must be made into loaves and baked *at once*, or it will be spoiled—it will be *over-leavened*, its pre-digestion in a true sense be interfered with, for the bread will *not* be sufficiently nutritious: the yeast-plant has had too much of the flour: it has been over-fermented.

We must now attend to the casein of cow's milk, which is to be our baby's bread, and on something the same lines, but in a widely different manner, we shall have to lower its nutritious nature as we debased (?) the flour to make our own bread, and if we *over-peptonise* the casein, we shall do much as we did when we over-fermented our bread—spoil it.

What we have to do, then, is to adapt the casein of cow's milk to the digestive power of the infantile stomach, and for this purpose we will avail ourselves, as a peptonising

agent (there are others, of course), of the Zymine Peptonising Powders (Fairchild) that we have with our Patent Safety Bottle, from Messrs. Burroughs and Wellcome, and we must carefully follow the instructions given us. We can prepare the milk for baby in large or small quantities; I prefer the latter. To begin with, we require about twenty fluid ounces (a pint) per diem, and if the milk is boiled up at once, and then kept in a cool place we can use it in small quantities as required. The following little experiment (No. 5) may be of interest to Obstetric Nurses. Fill your test-glass with the peptonised milk whilst it is lukewarm, and add the necessary quantity of essence of rennet, and in due time carefully examine the milk, and you will find that the rennet has *not* coagulated the curd. Why is this? Because it had been acted upon by the peptonising process to which we had subjected it, simulating it, as it were, to what I may call the *secondary* action of the gastric juice, *dissolving* and rendering it thereby more assimilable, without very greatly depriving it of a portion of its nutritive qualities. We have simply pre-digested the casein *out* of the stomach to render it more digestible *in*. There are many points in connection with this interesting subject we have not time to enter upon, the object of our little experiment being to show the *effect* the peptonisation has upon the casein of the milk and why we peptonise it.

So far, we have only dealt with the albuminous element of the milk. We will now turn to the fatty, or cream, a portion of which will have to be removed. Before doing this, test the cow's milk. If the quantity be normal, skim off rather less than half before you peptonise; the proportion of fatty particles in human and cow's milk respectively being as twenty-five in the former to thirty-eight in the latter. I need not tell you how important a part cream plays in infantile feeding. The nutritive value of casein is *not* complete without it. Next, as to the saccharine portion of milk, which you can see by the tables I quoted, is more abundant in human than cow's milk; hence we have to add sugar to it. But if there is less sugar, there is also less water than in human milk.

We now come to the most abundant of all the milk constituents—the aqueous—the proportional difference in

the quantity of water in human and cow's milk respectively being as 88·00 in the former to 86·87 in the latter—which is only slightly in favour of human milk. We may ask why do we add water beyond this limit? For a very important reason. If you glance down your tables you will see that cow's milk contains a larger proportion of solid or mineral matters than human milk, nature requiring more bone-forming material for a calf than a baby. We cannot remove these solid matters in cow's milk, so we must weaken them by adding water to cow's milk rather out of proportion to the actual ratio of the aqueous portion of both.

As well as in the solid, there is an excess in saline ingredients in cow's over human milk, and this also is equalised by dilution with water.

We must now retrace our steps—go back to the birth of our baby, and begin to feed him, and describe his food as we go on. The first question we have to ask ourselves is, shall the infant be fed at once?

This matter rests with the baby; some infants will *not* take food, others never cease crying till they have it. Generally speaking, I do not consider it is necessary to feed them at birth, but I am sure it is often expedient to do so. What shall we give our baby? I do *not* advise milk-and-water to begin with. Some nurses give a little warm sugar and water; but, for my part, I consider *thin* barley-water very slightly sweetened the best. Some people give thin gruel—more readily obtainable, perhaps, but in my judgment not so desirable. A few hours after birth there is frequently a quantity of bilious or acrid matter emitted at intervals, and possibly it is the pain caused by these fluids, that makes our baby cry, and hence a little warm bland drink, like the barley water, soothes the stomach, and even when ejected seems to cleanse it. When you place the infant in his cot, do not forget to put the soft bib or handkerchief under his chin, in the way I told you, so as to prevent the gown or the pillow from being made dirty, and baby put to the fatigue of having the former changed too soon.

It is not often that the newly-born sleep for the first twelve hours after birth; whether calm or crying, they are mostly awake. When shall we repeat the barley-water?

If there be vomiting, give a teaspoonful every two hours—it will help to soothe the stomach. If the infant is calm, wait until he asks (?)—*i.e.*, cries for it—and that may be four hours or more. Say the birth took place at 2 A.M., at 6 A.M. the infant may require changing; you can give a little more barley-water. It may be 10 A.M. before any more nourishment need be given. You now add a little cream to the barley-water, one teaspoonful to two tablespoonfuls of the former to be given in teaspoonfuls at a time every three or four hours, if the infant is awake. I must just here remark, that in mixing our baby's food we should go by *fluid ounces*, bearing in mind that twenty fluid ounces is one pint, ten a half-a-pint, and five a quarter of a pint. Do not rely upon *spoons*, but *measure-glasses*; even if you have a graduated bottle, which does not serve just now, as we work by teaspoonfuls (*fluid drachms*)—eight to the fluid ounce. I advise this mucilaginous drink for our baby for two days after birth. I find it comforts the intestines during the passing of the meconium. The cream is required, as it helps keep up the animal heat, as well as being a very delicate form of albuminous food. Now how shall we give this nourishment at this early period?

I have mentioned to you that I prefer to use one of our long-tubed glass nipple shields (reversed) to either spoon or bottle, by which means you can let the fluid *gently* flow into the infant's mouth, the swallowing of it being due to a suctorial act, and this again can be regulated by pressing upon the tubing at intervals. And, furthermore, baby can be fed in his cot, which cannot be done by spoon-feeding; and bottles are too large for our requirements, or baby's powers at this early stage of his existence. On the third day from birth we will begin the milk food, an important epoch in infantile life.

There is one point I wish to emphasise (as it really is more the duty of employers than nurses), which is, that the former should spare neither time, expense, nor trouble to obtain for the infant the purest possible milk. There is no difficulty about this in the country; but we know that in towns the difficulty of getting pure supplies is almost insuperable. The lactometer affords our best means of testing the amount of water *added* to the milk before we get it; but

even this is *not* infallible, so this consideration must weigh with us when we come to the question of *further* dilution with water.

Shall the milk be boiled or not? As a matter of precaution I strongly advise that it should, and beforehand—that is, when it comes, not as we want it. At the third day we may require a pint for twenty-four hours' use; boil it *up at once* in a clean saucepan (I prefer a tinned iron one to any other), and this should be kept for baby's milk *only*. The milk should then be poured into a clean *jug* (not a basin) and this also should be kept apart from other jugs, and the milk kept in a cool place. When the steam ceases to rise from the hot milk cover the top of the jug over with a piece of clean writing paper.

Now, what sugar shall we sweeten our baby's food with—cane or milk sugar? Our best authorities are in favour of the latter, hence I advise its use. You can get it of chemists and grocers, and it is cheap. There is one point you must bear in mind—it must be used in a *very finely powdered* condition, otherwise the crystals of which it is composed would not *dissolve* in the infant stomach for a length of time, if at all; and even if you are obliged to use *cane* sugar, let it be the caster sugar, not *lump*, nor moist—we can ascertain the quantities better in the former form.

We will next consider the water we put to our baby's food; and here again, as in the milk, every reasonable precaution should be taken to obtain it free from contamination, and there is *one* precaution that should never be omitted: it should *invariably* be *boiled* before using, *separately* from the milk. It is a good plan to boil up a pint, say, every day, and put it into a clean jug and keep it apart for your use, and in the same place as the milk; the reason for this is that if we have to give the milk hot, when we first boil it, for instance, we require the *cold* boiled water to cool it down to 98deg., but if we use the *milk cold* we have to boil up some water for that purpose. A nurse should have *two* pint jugs for the milk kept apart for her use, and one for the water, the former to be used in change, and the greatest care exercised to keep them clean within and without, and so with the jug for the water. A foul jug will spoil the best of milk. The

jugs should be daily cleansed inside and outside with *boiling water*, to which add one teaspoonful of Californian borax, and then rinsed in clean *cold* water. I prefer borax to washing soda for this purpose, as it has *antiseptic* as well as alkaline properties. It is, in my judgment, better *not to re-boil* the milk as you want it, but add *boiling* water to it when you mix the food. It does not matter how often the water is boiled over again; but the same cannot be said of milk.

The most perfect form in which we can use water for infantile feeding is *clean, distilled* water, which is *invariable* in quality—which is more than we can say for ordinary water—and, it is absolutely free from organic, inorganic, or mineral impurities; this last being noteworthy, because the cow's milk already contains an excess of solid constituents. I am of opinion that cases of infantile diarrhœa can be traced to *impure* water, as well as impure milk, and boiling does seem to deal with *inorganic* impurities, which are often of a very deadly character. Distilled water is a powerful, but harmless, solvent; and I have had reason to *believe* that it assists the digestion of the casein in the infant's stomach; but I merely offer this point for the consideration of those engaged in midwifery practice or nursing. Having considered the constituent parts of our baby's food, let us see how we shall mix them for our purpose. We cannot render cow's milk *identical* with human milk; but we must endeavour to arrive at a practical *approximation* to it, and I think you will find the following a reliable and safe formula to go upon; but, remember, *no* formula can ever do away for the *necessity* of all those little *precautionary* measures I have just brought before you; for in all that concerns either milk receptacles, bottles, or even *places* where milk is kept, the utmost care and cleanliness *must* be observed. Having boiled a pint of cow's milk, take from it *six* ounces. Add to it four ounces of water—that is either boiling or has been boiled—not *hot* water nor *warm* water. You now have ten fluid ounces of milk and water, or half-a-pint. Add to this *three* drachms of sugar, finely powdered. There may be a deficiency of fat in the milk; in that case, add a small quantity of cream—say, about a teaspoonful—to supply this

deficiency. In town milk I should recommend this to be done as a rule, because, as I have told you before, the casein is not perfect, as an alimentary substance, without it, and to the newly-born fat is of great importance in maintaining the animal heat—supporting combustion, in fact. I would rather feed a baby for the first five or six days after birth upon cream and barley-water sweetened than upon milk and water *without* the cream.

The food we have just mixed will have to be given in small and measured quantities at a time, one ounce (commonly called two tablespoonfuls) every four hours. It is very injudicious to give *too* much food at once. Overloading the stomach is a fruitful source of infantile dyspepsia. Ten fluid ounces will carry us over twenty-four hours, a portion being spent in slumber. Give this food from the nipple shield (reversed); the food must be made warm as we require it, *not* by adding hot water, and thereby upsetting *the proportions*, but by pouring the small quantity we require into a cup, and standing it in boiling water to raise the temperature to 98 deg. Now, in these cases a *very* small thermometer is a very handy thing, or a sensitive finger can be a very good test when you know what *blood-heat* is. Of course, these rules are not autocratic. A healthy, vigorous infant may on the fifth day from birth take two or three teaspoonfuls at a feed, and we can bring our feeding-bottle into use by that time; but I do earnestly enjoin nurses *not* to give food *too* often, nor in too large quantities *at a time*—it is always ejected. You need not take the infant up to feed him; he is more comfortable in his cot, and you can use the bottle from the first, if you prefer it to the little plan I advise, which I find more suited to the *early* suctorial efforts; but in either case, remember, he is to be *fed* and *watched*, and not allowed to *feed himself*, as careless nurses let him do in bottle-feeding.

There is one point about early infantile feeding we are apt to overlook—that all our *rules* (?) as to quantities are rather *guesses* than anything else, because the only knowledge that could really guide us, the *breast yield* itself, is withheld from us by Dame Nature. All we do know on that matter is that some infants *are* satisfied after sucking, and sleep for hours afterwards, which I consider our best test as to the *sufficiency*

of the meal (?), and others are *not*. Can the breast-yield, then, be always the same?

In hand-feeding, we also must *watch* the effect of the quantities we give. If the infant appears satisfied, and, above all things, sleeps afterwards, we may fairly consider we are about right; if, on the other hand, two things follow after a feed—vomiting or crying—we may surmise that, in the first case, we have given too much, and, in the latter, too little, food. If a nurse has reason to think that the milk is difficult to be retained in the stomach, a portion of the water added might be *replaced* by lime-water—say, a tablespoonful in the half-pint of food. If you *add* the lime-water without subtracting an equal portion of plain water, you *disarrange* the proportion.

By the fourth or fifth day the infant can be fed from his bottle, and our routine instruction being that the infant is to have *two ounces* (four tablespoonfuls) every two hours, for the greater part of the twenty-four hours of the day—viz., from 5 a.m. to 11 p.m., and if these feeds were given regularly they would amount to eight feeds, equal to sixteen ounces, or about three-quarters of a pint of milk and water per diem. I very much question if the average breast yield reaches this amount of fluid, to judge from the comparatively small quantities we draw off at a time, in cases of engorgement; and hence I regard the instructions as somewhat “autocratic”—and so does the baby as far as I know of him! Oftentimes he will *not* take two ounces at a time, nor will he take it *every* two hours if he happen to be sleepy; and the more he sleeps the better. Still, a nurse can get one practical rule to go upon out of her instructions, viz.—that the total quantity ordered, *two ounces*, is (to *begin* with) in *excess* of the needs of a newly-born infant; but at the beginning of the second week, it may be taken by a healthy baby; that feeding *times* are more in his hands practically, and the nurse’s than the “autocratic” during the time of an Obstetric Nurse’s attendance. The total quantity given per diem should not exceed a pint; intervals must to a large extent depend upon *circumstances*; to a baby a day is twenty-four hours. He is often *most* wakeful at that part of it we call *night*, and slumbers most peacefully at that part of it we call *day*, and

hence ruthlessly upsets our nice calculations! Still, I recommend strongly *method* in early infantile feeding, and am quite of opinion the more our baby takes in the day, the better he will sleep at *night*—also his nurse.

There are *two* rules in bottle feeding that we may regard as *absolute*—that baby is to be fed lying in his cot, and *watched* whilst he is fed. How are you going to place this feeding-bottle, having, of course, put into it the requisite quantity of food? Let us take a little hint from Nature, and we shall find that in her hands the milk flows *from above* downwards into the infant's mouth, according to the law of gravitation as regards *fluids*; but in artificial feeding we are apt to *reverse* this arrangement, for ninety-nine times out of a hundred the feeding-bottle is placed a long way below the mouth, and our baby has to get his food into it from *below* upwards from the depths of his bottle.

I have found the following little plan as good as any to meet this difficulty: When about to feed baby, raise his head on to the pillow, and, turning him a little on his *right side*, place a pillow beside him and put the bottle on it, just slightly above his mouth, in a *lateral direction*, and you will find this arrangement will facilitate his suctorial efforts, and by this means he may often be able to take *more* food, and with less fatigue (our baby's jaws are but feeble yet) than under the orthodox rules. There is another point, too, we must bear in mind—many of our feeding teats are *too long*, they tickle the back of the infant's throat, and hence the food is often ejected, and we are told it does not agree with the baby! We can meet this objection by pushing the bone ring nearer to the top of the teat, and holding it there with our thumb and finger whilst baby takes his food; but it is far better to have a shorter teat, especially for newly-born infants. The average india-rubber teat is not less than one inch and a-half long. In practical use *one inch* would be sufficient; I have no recollection of ever using a nipple an inch and a-half long; and hence I always select short teats for my little patients for the first four or five weeks of their lives.

There is another point I must mention with respect to the formula I have given you for infantile feeding—that it must be regarded as *invariable* for the period during which an

Obstetric Nurse remains in attendance, the only alteration being in the direction of a *slightly* progressive increase in the *quantity* of food given, *not* the proportions, as we used to be directed to do; by which means our baby's food was *too* weak, to begin with (there was not much nourishment in the superadded water), and *too* strong subsequently—and these see-saw arrangements were trying to the infantile digestion. Having once *approximated*, as far as is practically necessary, the proportion of cow's to human milk, it is, on the whole, better to leave it to the powers of the infant's stomach. You may ask then—what is the value of peptonising cow's milk for infantile diet? Something of the nature of a *crutch* to a weak or injured limb; we are glad to resort to it when needs must, but regret the necessity. In some such lines we may say that our best medical authorities are of opinion that peptonisation is neither necessary nor desirable, *unless* the infant be feeble, or there is any reason to think that the stomach cannot digest the casein of cow's milk, and hence peptonisation should never be undertaken by a nurse without medical advice and sanction; but it is as well that she should understand *how* to peptonise milk, *why* it is peptonised, and the *results* that accrue from its pre-digestion. In some exceptional cases the process is of infinite benefit, such, for instance, as helping to bring an infant round from the debilitating effects of the profuse hæmorrhage that follows after certain operations necessary to give the infant a chance of life when placed in jeopardy by some of the congenital defects that unhappily are sometimes present.

Peptonised milk may be advisable to begin with; but, generally speaking, when an infant has to be fed upon cow's milk, it is better to leave the digestive powers to get used to it from the first, and only hold out a helping hand when we *must*.

I think I have now brought before my readers the principal points (practical and theoretical) of hand-feeding, and have now only a few words to say upon the third division of my subject—*Mixed-feeding* (part breast, part hand), which is, on the whole, more frequent than the other two methods solely.

In Obstetric nursing we have to supplement the breast

supply most frequently under three conditions : (1) insufficient secretion of milk ; (2) supply ample, but the milk poor in quality (innutritious), infant does not thrive upon it, and dyspeptic troubles arise ; (3) where the maternal system requires to be relieved from the strain of *continuous* suckling, either from constitutional weakness or the debilitating effects of puerperal hæmorrhage, or critical labours ; but, whatever the cause, the instructions I have given you with respect to hand-feeding hold good. As a rule, we more often have to feed the infant at night rather than in the day, so as to give the mother the advantage of sleep. Mixed feeding may only be required temporarily, or, as is most frequently the case, permanently. During the first three months of lactation, this dual arrangement is very important to the mother, as it often enables her to suckle the infant for that period, or as long again if the maternal system is not *overtaxed* ; for I need not remind my readers how beneficial lactation (even partial) is to the uterine health of mothers, and how much it aids their complete recovery from child-birth—lactation, in fact, completes the cycle of gestation ; the former sustains the life of the unborn, the latter of the living child ; and any interruption to these wise and natural laws is fraught with contingent, though *remote*, evils to the maternal health, sometimes leading to serious uterine disease. If the mother's strength be maintained by good food, pure air, and moderate exercise and exertion, her child-bearing health would be distinctly benefited by lactation, partial or complete.

Hitherto we have dwelt minutely upon the duties necessary for the care of the newly-born. We shall now enter upon those required at what we may call the mid-period in Obstetric Nursing, beginning on the fifteenth day after birth. Under happy conditions the most anxious and onerous part of our work is over ; the lady is entering upon convalescence, and our baby has got over his early troubles ; but there are duties devolving upon this latter period essential to good nursing, and having a very important influence upon the infant's *continued* well-doing and comfort.

There was one portion of your duty, as regards the infant, that I pointed out to you as *beginning* at birth—but, as I mean to emphasise, by no means *ending* there—the care of

the head, or rather shall we not say the *brain*—the most sensitive and important organ in the infant system ; for even at birth, brain injury or brain disease may exist. The head must be carefully handled. The first consideration in brain (?) care is repose. There should be no hurried movement of the head ; it should be taken up from, or laid down on, the pillow with the greatest gentleness. Let us see the reason for this. During intra-uterine life an enormous quantity of blood, in proportion to any other organ of the body, is sent to the brain, for its nutrition and development, and after birth the copious stream still flows on to meet the demands of that organ. The infant heart-beats are extremely rapid, and so is the cerebral circulation, and we all know how hot a baby's head is.

The brain is enclosed in a bony case, called the cranium, and in infants the cranial plates are extremely thin, and the cranial articulations still loose. In addition to this outer envelope, the brain substance is contained in and protected by a serous sac, called the *dura mater*, and this again is lined by a soft, silky, secreting membrane, called the arachnoid ; hence we see with what wondrous care nature defends the citadel of sentient life from outer harm. The nutrition of the brain is entrusted to a vascular network, that covers its surface and dips into its manifold convolutions ; this beautiful structure is called the *pia mater*. The arteries that supply it are accompanied by the *vasa motor* nerves of the sympathetic nervous system, and we know that wherever we get increased vascularity in an organ, we have a heightened sensibility. Whatever quickens the always-rapid heart-beats of infancy give rise to cerebral excitement, the nervous disorders of infancy, commonly called convulsions, are due to that cause. We all know what a little thing will make our baby “start,” and the lightest impression of cold, hunger, or pain, conveyed to the brain by the sensory nerves, is flashed back by the motor nerves, and finds audible (?) expression in the reflex action of crying, the only way in which an infant can make known to us his woes, his wants, his wishes, or his wrongs.

The head in infancy varies greatly in size, *weight*, and shape, and these differences may, for the most part, be attributed to the greater or lesser amount of brain substance

contained in the cranium; on the other hand, mere *size* may be due to congenital brain disease, such as hydrocephalus, or an excessive thinness of the cranial plates, leading to a too great expansion of the brain, especially about the region of the anterior fontanel, and in this case baby is said to have soft or open head; hence, a small, firm head is more perfect in shape than the larger loose head. There is one point that has for some years attracted my attention—and I doubt not that of other practitioners in midwifery—and that is the increasing *size and weight* of the female infant head. Can we attribute this fact to the larger amount of brain-power exercised by the mothers of the present generation over that of their mothers and grandmothers before them?

We must, however, leave these discussions for something more practical, and the two points of nursing we deduct from the few facts I have just indicated, to show the extreme sensibility of the brain; the inference is the extreme need of *repose* and *slumber*, the rest of the brain; and this first has been (and still is) interfered with by the *bad* nursing habits, *rocking* and *jerking*. This last is popularly called “joggling”: this interesting (?) manipulation takes place something in this wise. The little victim is taken up from bed or cot, wide awake, and nurse, sitting close to the fire, with baby’s face well in front of it, puts him on one of her knees in an upright position, his head hanging over her arm, which is placed across his chest; having thus positioned (?) the patient (?) she commences a series of short sharp “jerks” with her foot, and as these soothing (?) movements are generally objected to on the part of the sufferer by “cries,” the aforesaid are redoubled to pacify (?) them—the little head rolls about from side to side, having no support but the slender neck; the countenance is suffused with deep flushes, “tears roll down his innocent nose,” and more often than not baby is sick! Thousands of infants are subjected to this treatment every day of their lives, and not once only, but many times a day. I leave my readers to judge of its effect upon infantile health and comfort, and I am inclined to think they will agree with the writer, that we had rather *not* “joggle” *our* baby. The time-honoured custom (though more honoured in the breach than in the

observance, according to our modern ideas)—rocking—has a halo of sentiment around it; and poets, for many generations, have used it to symbolise calmness, security, and peace. The mariner is rocked to rest on the bosom of the deep; the infant, on his mother's breast. The object of rocking, then, is to soothe the infant, and, in a measure—and in a *very* small measure—it may do so. Is there, then, no other way to quiet an infant without rocking—that is, disturbing the brain? Too much rocking has this effect, until at last it loses all power to soothe. I believe, and you will find, that when an infant cries, being half asleep and half awake, a very slight alteration of position, *gently* made, turning him from one side to the other, or raising the head a little, will suffice to soothe. There is also another little manœuvre I have often practised with good effect, that is, letting him hold one of my fingers, the baby hand twines round it, and the feel of it seems to give him a sort of sense of security, and he will frequently drop off to sleep. It is not desirable to take a baby out of his cot when you know there is no need for it, because he thinks proper to indulge in “cries.” Soothe him where he lies; the quieter you keep him the better he will be, for the necessary duties required for his comfort are as much as the tender strength can stand.

CHAPTER VI. GENERAL DUTIES.

SLEEP, HOW TO PROMOTE IN INFANCY—"CRYING"—NARCOTICS
TO BE DEPRECATED—FLATUS—ACIDITY—CHAFING—IN-
FANTILE CLOTHING—THE ROBE—THE HOOD—THE CLOAK
— HAND-CARRYING NOT DESIRABLE — METHODS OF —
BASSINETTES FOR OUTDOORS PREFERABLE—TO BE HOODED
TO PROTECT INFANT FROM DIRECT SUN-RAYS OR WIND.

WITH respect to sleep, "that consummation so devoutly to be wished" for the good of our little patient, and the comfort of his nurse, it might appear unnecessary to say anything; but those of my readers who have had most experience in our portion of nursing work will, I think, agree with the writer that even from very earliest infancy slumber can be promoted or hindered by good or bad management respectively (of course this remark applies to healthy infants and normal cases). When we calmly consider the immense importance of sleep—the rest of the brain—to infantile *growth* and well-doing, we must admit, that whatever tends to encourage it is a proof of good nursing. The first point to consider is that the infant must be got into a habit of going to sleep *in* his cot, and not by being rocked in his nurse's arms as a preliminary measure—a common result of this soothing (?) process being that he wakes up as soon as he is laid down, when the process is again repeated, and a bad precedent becomes established. I also advise that the usual practice of rocking an infant to sleep when laid in the cot awake, should be dispensed with. When once begun, it only leads to more rocking, and the infant will not be quiet without it—nor *with* it—when the nurse has made a habit of it. Another point to bear in mind is that the infant's slumber should *never* be broken day nor night; patiently wait for his awakening. Another means of pro-

moting sleep is by regularity in all the duties required for our little patient's comfort—bathing and dressing, feeding and changing. Cleanliness leads to a sense of comfort, and that will induce to slumber, and so again will fresh air, and the ventilation of the room must be attended to. Purity of air is always an important factor in helping on peaceful slumbers, and the infant system is very sensitive to the evil effects of vitiated air. As I have already touched upon the subject of ventilating the lying-in room in my earlier chapters, I must refer my readers to them ; so need not repeat those instructions.

Shall an infant be taken out of his cot for the sake of a little recreation when he is awake—no duties requiring his removal? Obstetric Nurses differ on this matter—some holding on sternly to the rule that the infant shall only be taken up to tend him for the *first month* of his existence ; others, again, will take him up every time he awakens, night or day, from the first. As usual, we shall here, as in mightier matters treat the *juste milieu* as more consonant to common-sense than either extreme. For the first eight or nine days I am in favour of autocratic rule, but after then I am disposed to take a more genial view of the situation, and consider that during the *day* an infant may be taken up and carefully nursed, and thus allowed an opportunity of taking a limited view of the world—*i.e.*, room into which he has so recently entered ; and, furthermore, I am distinctly of opinion that the babies enjoy this privilege (especially the girls), and that their diurnal effort at *self-improvement* on their part, on the “Something attempted, something done,” rule of the poet, “may earn a night's repose” !

The value of these few practical measures to induce sleep will become more manifest when we regard them as a sort of antidote to what we may call the “crying evil” of Obstetric Nursing. It is a melancholy fact that, even under the best of management, numbers of our babies indulge in what appears to be “causeless crying,” and, for some mysterious reason or another, these outbreaks take place at night. It is a somewhat humiliating confession to make as regards our sex, but the girls have a worse reputation for these “crying fits” than the boys. Whether it be they are

less amenable to an appeal to their creature comforts (stomachs), or whether, as women are born to weep, they begin at once, I know not; but there is one remarkable fact, common to both *sexes*, that they neither appear to be a bit the worse for their misapplied vocal efforts. It is the poor nurses who are the sufferers!

There is one side of infantile crying not at all laughable—to the poor babies, for it has led to the baneful, I do not hesitate to say iniquitous, practice of giving them narcotics, mostly in the form of some quack medicines, that ninety-nine times out of a hundred contain opium in *some* form or another. In the rare cases in which narcotics are given to infants under medical direction, their evil effects are minimised by careful *directions* implicitly carried out. In the bought compounds, the doses prescribed by the vendors of these delectable soothing syrups, &c., are *not* followed, but often, by reckless and ignorant mothers and nurses, *doubled*, and the intervals shortened, in cases of aggravated crying—and the fell remedy (?) is worse than the trouble it is given to relieve. Anything more woe-begone than a poor little narcotised baby one can hardly see. The heavy eyelids droop over the eyes, the lines of the face are all drawn down, especially the corners of the mouth; the countenance is pallid, with a slightly livid hue all over it; the arms hang listlessly down, and the hands too feeble to grasp your finger or anything else. At intervals the baby jaws are put on the stretch by a weary, dreary yawn, that a Sir Charles Coldstream might envy; the infant will take neither breast nor bottle, and cares not for food until the effects of his potion have passed away, and during this period he is extremely good, all “cries” are hushed! I am quite aware that this deplorable state of things is greatly on the wane, still, it goes on (secretly) in rural districts and urban slums, and therefore I consider it the duty of all women engaged in midwifery work to oppose and expose a practice so harmful to infantile life and health.

Is there any way, then, by which we can pacify the crying of early infancy? I have recently alluded to it as “causeless;” it would be more accurate to say, difficult to account for; but, as far as my experience goes, I am of opinion that the

crying may be brought about by spasmodic pains in the stomach or intestine, by distention of the walls of either viscera, by flatus or imprisoned gas, the result of the decomposition of the food; and when we consider the tortuous convulsions of the intestinal tube, and the pressure to which it is subjected from the abdominal viscera, huddled together, as it were, from the imperfect development of the infantile pelvis, the slightest obstruction to the passage of the food would give rise to *temporary* pain and discomfort, without any serious result; and, as I said before, very few infants appear to be any the worse for their crying bouts. The recumbent position of our baby, and the weakness of the intestine in infancy, will also favour the accumulation of air in it, and we know that taking our infant up from his cot, and laying him face downwards over our shoulder, will often stop the crying. The routine remedy for this particular infantile trouble is one or other of the carminatives—of infallible effacacy (of course)—sold all over the kingdom, and perhaps they are, on the whole, less harmful than some of the other developments of infantile quack medicaments, and in many cases they are harmless palliatives for temporary evils; but they all have one depressing result in the long run, the “wind” goes on just the same, and cares no more for them than for the old country folks’ remedy of a glass of cold water with a red-hot cinder dropped into it, to be given in teaspoonful doses *ad lib*!

Is there nothing we can do, then, for this infantile trouble—flatulence? I think there are three simple measures we can safely rely upon—warmth, friction, and a gentle stimulant. The two first are external remedies; the last we call internal, or medicinal; and these considerations lead us up to the question, “Should an infant of this tender age (mid-month) be bathed in the evening as well as in the morning.” For my part, I advise *not*, nor, in fact, do I consider the evening bath desirable nor necessary until the second month is cleared; the loss of *heat*, inseparable from this simple process twice in twenty-four hours, means, to a certain extent, loss of vital energy, which, in this tender period, it should be our duty to conserve, not waste, if we wish to promote our baby’s *growth*, and we all know that

"chills" are most injurious to infantile health, and we should carefully avoid all unnecessary risks of them. But when an infant has cleared the second week from birth, and is fairly vigorous, it is a good plan to undress him in the evening, sponge the buttocks, remove the belly-bands, and put baby face downwards across your knees, having your warm flannel apron next to the abdomen, with your chair quite close to the fire, and baby's *feet* towards it, and with one of your hands, made warm, pass it gently over the shoulders, back, buttock, and lower extremities, and you can keep up this sort of massage (?) for some minutes—nearly all the babies appear to be comforted by it; then turn him on to his back, and, before replacing the binder, repeat this *gentle* friction over the abdomen; these simple moments will often expel the air from the intestine, and thus prevent the pain caused by its imprisonment, at least such is the outcome of my experience.

But suppose that, in spite of these soothing measures, our baby cries at night, and we suspect pain as the cause, how shall we get an idea of the seat of it? If the bowels, baby will draw up his feet, and cry when the pain comes on, but in the intervals the slightest pressure over the belly will cause more "cries," *i.e.*, increased pain; if in the stomach (from distention), the cries will be more *continuous* than intermittent, tears will flow copiously down the baby's face, and food will be refused; and change of position appears to afford no relief. In either of these frequent troubles I find the best and safest medicine is the best pale French brandy, it acts both as a carminative and *safe* anodyne: put a teaspoonful into one ounce (two tablespoonfuls) of *hot* water slightly sweetened, give one teaspoonful for a dose, and, *if* necessary, repeat again in an hour's time—as a rule no more is required, the pain is relieved, and baby goes to sleep. I do not recommend this simple remedy to be resorted to on *all* occasions when baby cries, but only when symptoms point to intestinal pain as the cause of the crying.

Flatulence leads us to the consideration of another early infantile trouble—constipation, which is more frequent in hand than breast feeding, and the most common cause being *improper food*, the removal of the cause of the evil is

better than any attempts to *cure* it. Constipation does not always give pain to the infant; the seat of the discomfort is the rectum, as a rule. What are our best preventive measures in cases where the infant is carefully fed on cow's milk? We know that it is only the solid portion of the milk (the casein) that occasions the obstruction, and that our best plan is to deal with it *in the stomach*, for "acidity" is the cause of constipation. When you find that the milk or a portion of it is ejected soon after it is swallowed, and that the curd is more solid than usual, and acid, you must put lime-water to the food, a teaspoonful at every feed, until the stomach settles, and you find that the motions are less firm than is the case in constipation.

The residual casein should be passed from the bowels almost as soft as the curd ejected from the stomach, the hardening of it being due to the action of the juices of the digestive canal, and the simplest and safest antacid is the lime-water. *Alkalies* should be avoided in lay hands, for, recklessly given, they aggravate the evil they are supposed to relieve, and the practice of giving *magnesia*, without any regard as to *quantity*, has led to the formation of concretions in the intestines, to the great peril of infant health; nor can the fluid form of *magnesia* be recommended; it is a caustic alkali, and injures the delicate coats of the stomach and bowels alike. And here I wish to earnestly advise every nurse in our portion of work "to put away ambition" in the way of *medication*—it does, more often than not, *harm*. Healthy babies do not require it, and sickly ones had better be handed over to the doctor. As nurses, we will work upon the lowly lines of prevention, and leave "cures" to professional hands.

What aperient shall we give when we have actual intestinal obstruction? The immemorial castor oil is certainly the most popular, and has the reputation of being perfectly harmless. I do not altogether share this opinion, and recommend you not to be in too great a hurry to give it. Let the natural efforts have a fair chance, say an interval of, at least, twenty-four hours from one relief to another. The orthodox dose is one teaspoonful—place a little white sugar at the end and *under* the spoon, and some on the tongue

and lips of the infant, have the head low, pour the oil into the spoon after the sugar is in, press down the tongue gently with the spoon and tip the oil down baby's throat; when you take away the spoon he will suck the sugar off his lips and tongue, and that helps him to swallow his dose. If you merely pour the oil into the infant's *mouth*, it runs out, half of it is wasted, and the gown messed with it; it is better to put a handkerchief under the chin before you give the oil. Boys take it the best; the girls make more "fuss" over their fate! Recently glycerine has been used in lieu of Ol. Ricini; for my part, I prefer it; *that* is safe, and you can repeat the dose (same as the oil) without anxiety, and the babies like it put into a little warm milk.

Sometimes we have what we may call the *rectal* trouble of constipation. How shall we deal with it? Enemas used to be given, as you know, and also certain mechanical measures, such as passing a small plug of soap up the rectum, or cotton-wool steeped in sweet oil, but better than all these applications, is a glycerine suppository. You can buy them fit for infantile use. I take one up with my dressing forceps, having thoroughly vaselined them, and pass it well into the rectum, placing the infant on his back for that purpose. I have never known this plan to fail.

Another infantile trouble, *chafing* beginning soon after birth, and continuing for some time, might at first appear to be due to careless nursing, but this is not always the case; undoubtedly neglect will greatly aggravate the evil, though it may not cause it. The usual positions for these excoriations of the skin are the creases of the neck, the axillæ, the groins, and the genitals, affecting the vulva or scrotum. In the three first-mentioned places neglect is more often than not the cause, from imperfect drying after washing. The genital tenderness may also be due to not changing the napkin sufficiently often, or the reprehensible practice of using the india-rubber pilches in lieu of flannel. And here I must impress upon mothers and nurses the need of *carefulness* in the management of the infant's napkins in the matter of *washing*; no *washing powders* of any kind, nor *washing soda* should be used for them. When the *wet* napkins are removed they should *at once* be put into a pan

of clean *cold* water, *soft* if you can get it, and then rinsed out of another water, wrung and hung out to dry, in the air if possible, and napkins so treated may be used for another change, if supplies run short; the *soiled* napkins should be sent to the wash, as soon as possible, never kept for more than a day or two; they should be washed with the best pale yellow or curd soap, *abundantly rinsed*, and, as usual, mangled; though, for my part, I consider they are better sent in *rough dry*, and softened by a little hand-rubbing before applying, as being warmer feeling and more comforting to the infant—this is, of course, merely a matter of opinion. The *rule absolute* is *good washing*.

There is a practice amongst some nurses that I feel almost ashamed to mention, but as we know it exists, I cannot pass it over, that is drying the *wet* napkins *without rinsing* them, and putting them on again. Such crass negligence, or shall we say laziness, as this is most deserving of censure, and is often the cause of much suffering to the infant.

We have seen how to avoid or minimise the misery of chafing. How shall we treat it? The first point is always to wipe the parts *dry* with a soft clean towel, and then, and *only* then, to powder them; remember powder is no substitute for wiping; these are preventive measures. As *remedies* two things were much relied upon in past days, and to a large extent used now—Fuller's earth and cold cream. With respect to the former, it is better bought in the rough and prepared at home; get a good-sized lump of the earth, taking care to see it is as clean as possible, dip it in cold water, place it on a large plate, put into the oven and let it dry gradually. You then take it out, crumple it up with your hands, or roll it out with a rolling-pin till it is quite smooth, then sift through a piece of muslin, and put into a clean pot ready for use; it is put on wet, and allowed to dry on the parts. I have no great opinion of this primitive preparation, and neither use nor recommend it, as in my judgment modern times have brought us better remedies. The latter—cold cream—was for years a favourite emollient, and this also can be home-made, and still finds favour with many mothers and nurses.

There are many ways of making cold cream. Amongst others, the following recipe may interest my younger readers, as it enjoyed a wide reputation amongst the writer's patients in early days of practice, and finds favour still in certain by no means obscure quarters. Take six ounces of the very best lard, put it into a basin of cold water, cover it over with a plate, and put it into the oven until the water boils, and the lard is completely melted. Take the basin out of the oven, and put it aside in a cool place until the following day. You then find the lard in a cake on the top of the water. Remove it carefully, and turn it upside down, when you may see a little brown sediment on the under-side of the cake, which you carefully scrape off with a sharp knife and throw aside. The reason for what we have done is to get all the *salt* out of the lard and also grit. We now put it into a clean pot (a jam-pot does the best), and stand the pot into a saucepan of cold water, and place it on the fire. As the water gets hot, the lard melts, and we add to it two ounces of the best white wax, *shredded very fine*. When the two fats have completely melted up, we take the pot out of the saucepan, and, as the mixture cools down, we *continually stir it round and pour in gradually two or three ounces* of the very best French rose-water. As the mass cools down and consolidates, it becomes beautifully white, fragrant, and pure, and you can put it into an ordinary cold-cream pot for use, and store the rest in the larger pot. This simple preparation is cooling, wholesome, and perfectly harmless.

The modern substitute for the older emollient is our universal vaseline, which possesses one great advantage over all other unguents, inasmuch as it is *not* a fat, and therefore does not undergo change by keeping and become rancid, as all other ointments do; and one merit of our homely preparation I have just told you about was, that we always made it fresh for use, and did not allow it to become rancid. For my own use *professionally* I always added carbolic acid to it, and, by this precaution, kept it sweet for a length of time; but now we carbolate our vaseline instead, until we give ourselves over to corrosive sublimate. There is nothing more useful in our portion of work as regards our infant than vaseline. Preferably I use the white or purified

vaseline, one of the most delicate emollients of modern days. The brown is good and far cheaper; but whether you use white or brown, get the *best*—*i.e.*, the Chesebrough Company's.

As well as an emollient, we require a powder for infant use, but, in cases of genital chafing, simple starch powder will not always suffice. Some nurses, as you know, mix oxide of zinc with powdered starch in the proportion of two to one; but I have recently used a preparation that I prefer to this routine mixture. The manufacturing chemist of whom I get it calls it Pulv. Zinci Oleas Co., the proportion of the astringent being five per cent., and I find all the effective without any of the oftentimes irritating results of the oxide of zinc. I always use it for genital chafing, especially in male infants, in conjunction with vaseline, which should be plentifully used whenever the infant is changed night and morning. As I have said before, chafing of the genitals and buttocks may be caused by an irritating condition of the urine or blood, and this may require a little simple medication. In breast-fed infants, the mother's milk may be at fault, and this may be due to constitutional causes or injudicious diet; and, as far as my experience goes, I find excoriation more frequent in breast than hand-fed infants. Small doses of bicarbonate or chlorate of potash, taken in milk, are sometimes given to mitigate the scalding action of the urine; but the most popular remedy is magnesia, and perhaps the best form is the light carbonate of magnesia. The dose given at any one time should not exceed five grains. It is credited with a cooling influence on the blood. Manna is an old-fashioned remedy, and it is certainly a simple and harmless aperient, sometimes given in combination with magnesia. In hand-feeding, of course, the cow's milk may disagree, and so we shall have to change it if we find the excoriations from the urine do not yield to ordinary measures. The *source* of our milk supply (except in the country) is hidden from us, and our ignorance of the bovine health and surroundings keeps us in absolute darkness as to the *quality* of the milk yielded, and all we can do when we feel a doubt about the milk supplied is to get it elsewhere, though we may be no better off. I also advocate persistent

grumbling when Mr. Chalk's *performances* are not *quite* equal to his *profession*.

Whilst upon this subject, I may mention that many authorities recommend goat's milk for infantile feeding, and it certainly has this advantage—that hundreds of people might have a “Nanny” for baby, which is small expense to keep, and little trouble to tend, who could not accommodate a cow; and if no stable is on the premises, a shed will shelter her, and we can then keep the milk supply under our own ken.

I have criticised the clothing of the newly-born; and now again at this latter part of our term of duty, the subject becomes one of interest; and there are three garments we may almost call special to this period we will pass under review—the robe, the hood, and the cloak. The first is dear to every mother's heart in all classes of the community, rather from its *ornamental* than commendable qualities. It differs from the gown, insomuch as it is low in the neck, short in the sleeve, slightly longer, and altogether more handsome; like the cot and the cap, it marks social distinction; and amongst the rich and the great is often of great value from the beauty and variety of the lace (that entrancing article of female desire) that so lavishly adorns it. In order to bring this æsthetic garment into harmony with the eternal fitness of things, two conditions are indispensable, a dear *fat* baby, and a sub-tropical temperature; the former will give us but little trouble to find, but in our “sea-girt isle,” the latter, for ten months in the year, can only be obtained by artificial means and at lavish cost. In order to improve the appearance of the robe, it is made smart by shoulder knots of white or coloured satin ribbon.

Having dwelt upon its romantic side, we shall find now that we return to every-day life and duty, that much of the glamour that surrounds this ancestral garment will be subject to a rude dispelling; for out of that spirit of imitation that is said to be the sincerest form of flattery, it has been travestied by lowly imitators into a veritable garb of woe for hapless infancy—but little better than a shroud!

This little garment consists of two parts (body and skirt), the latter being mostly made of jaconet or Indian muslin,

properly adorned down the front with lace and embroidery, and, as a rule, has far too much starch in it, especially amongst our artisan classes, where the most harm comes from the robe. The bodies are bought separately, and are always trimmed with insertion and embroidery; some are cheap and some are dear, but all are the *same in make*—that is, excessively *low in the neck and short in the sleeve*, and this is where the evil comes in; and to still further intensify it, in thousands of instances, in past years, and far too frequently *now*, this senseless garment is provided for us for baby's *first* dressing, and we are desired to tie up the sleeves with ribbon, baring the axilla and exposing the chest-walls to the air! Could the force of maternal folly any further go?

I have recently said a few words upon brain care; let us now give a little attention to *chest* care. We know that in early infancy the heart-beats are extremely frequent, the pulmonary circuit short, the respiration rapid, and this constant oxidation of the blood gives rise to great heat, and hence the chest and chest-walls should from *birth* be carefully protected from cold, and how can we do this if we constantly expose them to the air? Very often these half-clothed infants have an *outer* wrap, in the way of a heavy shawl, which oppresses rather than comforts them, and being frequently and carelessly taken off, the infant contracts a chill, leading to infantile bronchitis and ending in congestion of the lungs, and thus thousands of frail little lives are cut short within the brief space of a month of their existence. And, not only the respiratory, but the digestive organs may suffer from this misjudged clothing, and an eminent French physician gave it as his opinion that the "thrush" of early infancy, beginning at the tongue and extending to the gullet, stomach, and intestinal tube, might be brought about by careless exposure to cold; and we all know that this ailment is far more common amongst neglected than well-tended infants. In my earlier chapters I dwelt minutely upon the clothing of the newly-born, and if my readers refer to them, they will see how carefully the dangers we have just been describing are avoided.

Assuming that nurse has to put baby's robe on to him for some festive occasion or other, he should be protected

from cold by placing a soft Shetland wool shawl *lightly* over the neck, shoulders, and arms, so as in no wise to oppress or overheat the babe, and this little precaution will avoid any risk of chill; and I should advise it being resorted to even in warm weather.

The *Hood* marks a step in advance in our baby's little life, for it means that he is about to make his first acquaintance with the world without, and as a consequence must have a head-gear of some sort; but there is something more than head-gear goes to this question, for it leads on to considerations of the greatest importance to infantile life and health. Popularly the baptismal ceremony marks the epoch, and for the want of a little thought thousands of tender infants are hurried to the font, in the face of our pitiless climate, and but too often hurried to their graves from exposure to it. My remarks, of course, apply more to our artisan classes, but they are not entirely without force for their superiors in the social scale. Nor is there any need for this unwise haste, for our Church provides for the private baptism of infants in case of necessity, and in healthy infants the rite can be deferred.

The considerations that should principally guide us here are season, climate, locality, and state of infantile health. With respect to the first, let us assume that the birth took place in November, the worst month in our country for such an event, add to this, that the infant is an inhabitant of London, or one of our large manufacturing cities. Under ordinary climatic conditions, it would be April following before it could be prudently taken out, and by then he would have struggled out of his swaddling clothes and have been increasing in strength day by day. During the winter the babe should be kept in rooms of an even temperature (68 deg. Fahr.). The day should have a *sunny* aspect, a matter of much importance in infantile hygiene; the night can have a cool aspect—it can always be kept warm by fires. In the cold weather, and during the summer, the advantage of a cool, fresh atmosphere for a sleeping room for infants and very young children is most desirable. The influence of *sunshine* and *shade* upon early infantile health and growth is one of much interest to thoughtful observers. Now, if these day

and night rooms are well ventilated, the infant obtains as much fresh air as he requires, and in large cities the atmosphere in winter is nearly always bad, and the babe is better indoors than out. The value of these precautions will be more apparent when we reflect how many thousands of tender infants are taken out in frost, in fog, in bitter winds, under the deplorable notion that they can be "hardened" by so doing against the vicissitudes of our pitiless climate; but, alas! those who know best know but too well that for one infant "hardened" into health by this drastic process, hundreds are "hardened" into disease, suffering, and death. The eminent physician, Sir James Simpson, denounced this mischievous fallacy of "hardening" tender infants and young children by exposure to weather, and also insufficient clothing, and his remarks hold good to this hour.

Let us take another view of the matter, and assume that our baby is born in May (the best month of the year to be born in); we can modify our arrangements to suit the altered conditions. In the first instance we had all the winter months before us; now we have all the summer and early autumn to look forward to, and by midsummer town babies can be taken into the square gardens and public parks, and country babies into gardens, fields, and lanes, and sunshine and soft airs make them grow like the flowers.

There is here a point to bear in mind, that during the summer the infant's head must be protected from the direct rays of the sun, if carried, by a sunshade; if in a bassinette, by an awning. For my part I prefer the latter mode of conveyance to carrying, the infant being comfortably laid on a pillow and covered over. *Too much light* is not good, as it over-stimulates the brain, and I have had reason to believe, induces fits of uncontrollable crying. I should also advise the covering of the bassinette to be green or blue, and *not* the usual drab colour.

I told you how to handle the infant; remember these instructions when you have to carry him out. There are two ways of doing this—*underhand* and *overhand*; the former is the right method. The head and shoulders of the infant should rest on one arm (the left), the rest of the body on the other, and the baby held perfectly level. The

two hands (palms upwards) are gently closed over the *outer side* of the infant, and held firm; the perfect freedom of the limbs is secured, and there is no risk of the infant being let fall. In *overhand* carrying all these conditions are *reversed*—the infant is grasped by his nurse's arms, penned in (as it were), and by no means *securely*, and he can only be kept in position (?) by continual *jerking* efforts to prevent his falling—very comforting (?) for poor baby!—and, moreover, this routine plan of proceeding is far more fatiguing to the nurse than the former plan I described to you.

Having finished our somewhat lengthy digression, we must return to our subject (baby's head-gear); and the conditions required by it are softness, lightness, and warmth. The materials generally employed were satin, silk, sarcenet, and cashmere, often elaborately embroidered or braided, and the first often quilted. To one and all of these fabrics there can be no objection. It is to the *hood* I have for many years past had the *hardihood* to take exception; time has not softened my critical asperities; but I am happy to say it *has* brought about a much-needed reform. This little head-gear was "fearfully and wonderfully made" (up) upon something stiff, a foundation eminently suited (?) to the tender infant's head. It had an arrangement behind that was called a *curtain*, and a rosette adorned the front, which was sometimes slightly depressed in the middle, that threw the sides of the hood away from the face. It was *hot* where it ought to have been cool, and *cool* where it ought to have been warm. It also had a delightful way of falling *back* from the head, and this put such a strain upon the strings that fastened it under the chin, as to bring the infant within a measurable distance of strangulation! There was a lace border inside the front of the hood, and a long lace veil fastened to it covered baby's face all over, in a somewhat aggravating manner, and almost reached to his toes.

The hood, like the robe, is found in all grades of society, and the lower it went down the more its faults were accentuated, especially in the matter of *stiffness*, and amongst our artisan classes it was regarded with a kind of adoration. The favourite material was Persian silk, finely quilted, the

colours most preferred being white (for first-borns), pale pink, blue, or fawn (for less favoured mortals). I have beheld the first-mentioned in its pristine and immaculate loveliness, and had it been placed under a glass shade to be admired at a respectful distance, like a choice piece of confectionery, my voice might *possibly* have swelled the murmurs of applause its appearance never failed to evoke ! I have also seen it in its decadence, ousted by a pink or blue successor, faded, smirched, disdainfully treated, battered *out* of shape and into *softness*, and I have felt remorseful for the *hard* things I once said of it, and by way of amends admit I have at last discovered *one* merit.

Of late years this little head-gear has been largely superseded by the knitted hood ; and certainly in wool we find nearly all we require ; and when we consider that the hood is worn in the recumbent position, its softness and pliability are great advantages. It is sometimes overdone in the matter of ornamentation, and the baby face is almost buried under a mass of snowy wool, and the head is made too hot. There is one precaution I must mention in respect to the knitted hood. It should not be too hastily removed when the infant is taken indoors, for the head is often bathed in perspiration, and unless the room is very warm the babe may take a chill ; and I have reason for thinking that this results far more than is suspected. The best plan is to substitute temporarily lighter head-covering than the hood.

The cloak was the other out-door garment, generally made of merino or cashmere, braided, embroidered, or trimmed with plush or velvet ; it had a large cape to it, trimmed to match the cloak. In order to prevent it getting crushed, the nurse placed it over her arm on which the baby's head lay. It was not of much use for the baby and apt to drag from the neck ; it was, of course, put over the baby's shoulders.

For my part, I do not care for the hand-carrying of infants when they are taken out. I consider they are more comfortable in a bassinette, and placed on a soft cushion or pillow. A knitted woollen jacket should protect the chest and arms of the babe without oppressing him, and allowing the free action of the hands and arms, without which no baby can

be happy ; a soft, woollen shawl over the shoulders and covering the whole of the body is light and warm, and over this a coverlet of some sort ; a hood of wool or soft quilted silk is the best head-covering. Six-weeks-old infants, in the summer, can be taken out in the bassinette for a short time every day ; and another advantage is, you can feed them, if necessary, without taking them up, and it is only in the *warm* weather that infants should be taken into the air, the hood of the bassinette being always made use of to protect the face from sun or wind. I do not advise *veils*, they seem to me to tease them ; they can see about them better with the face free to the air.

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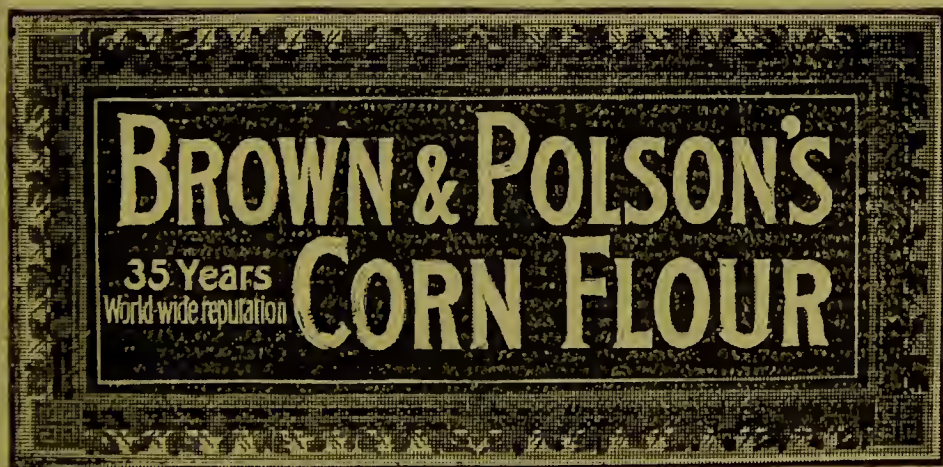
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AND

MELLIN'S FOOD.

1. Analysis of a mixture of Mellin's Food, Water, and Cow's Milk, prepared in accordance with the directions, viz. :—

Mellin's Food, 1 tablespoonful or $\frac{1}{2}$ oz. ; Water, 2 oz. ; Cow's Milk, 6 oz. ; or, Mellin's Food, 5.88 ; Water, 23.53 ; Cow's Milk, 70.59 ; Total, 100.00.

		Water.	Sugar.	Nitro- genous Matter.	Butter.	Salts.
MELLIN'S FOOD 5.88	Water ... .78	.78	4.27	.57		.26
(Fresenius' Analysis)	Sugar ... 4.27					
	Nitrogenous Matter... .57					
	Salts ... .26					
Water ... 23.53	Water ... 23.53	23.53	2.68	3.88	2.54	.46
	Water ... 61.03	61.03				
	Sugar ... 2.68					
Cow's Milk... 70.59	Butter ... 2.54					
	Casein ... 3.88					
	Salts ... .46					
Totals 100.00	100.00	85.34	6.95	4.45	2.54	.72

2. Comparative Analyses of Human Milk and MELLIN'S FOOD.

		HUMAN MILK.								Mellin's Food AS ABOVE.
		Analyses quoted by Tanner.				Wurtz's Average	Leeds' Analyses of 43 Samples.			
		Fair.	Dark.		Aver- age.		Min.	Max.	Aver- age.	
Water...	...	89.20	85.33	88.90	87.81	87.02	83.34	89.09	86.76	85.34
Sugar ...	...	5.85	7.12	4.36	5.78	7.05	5.40	7.92	6.99	6.95
Butter...	...	3.55	5.48	2.69	3.90	4.06	2.11	6.89	4.01	2.54
Nitrogenous Matter	...	1.00	1.62	3.92	2.18	1.67	0.85	4.86	2.05	4.45
Salts	...	0.40	0.45	0.13	0.33	0.20	0.13	0.35	0.21	0.72
		100.00	100.00	100.00	100.00	100.00				100.00

Samples, Pamphlet, and Prospectus post free on application to

MELLIN'S FOOD WORKS, PECKHAM, S.E.

